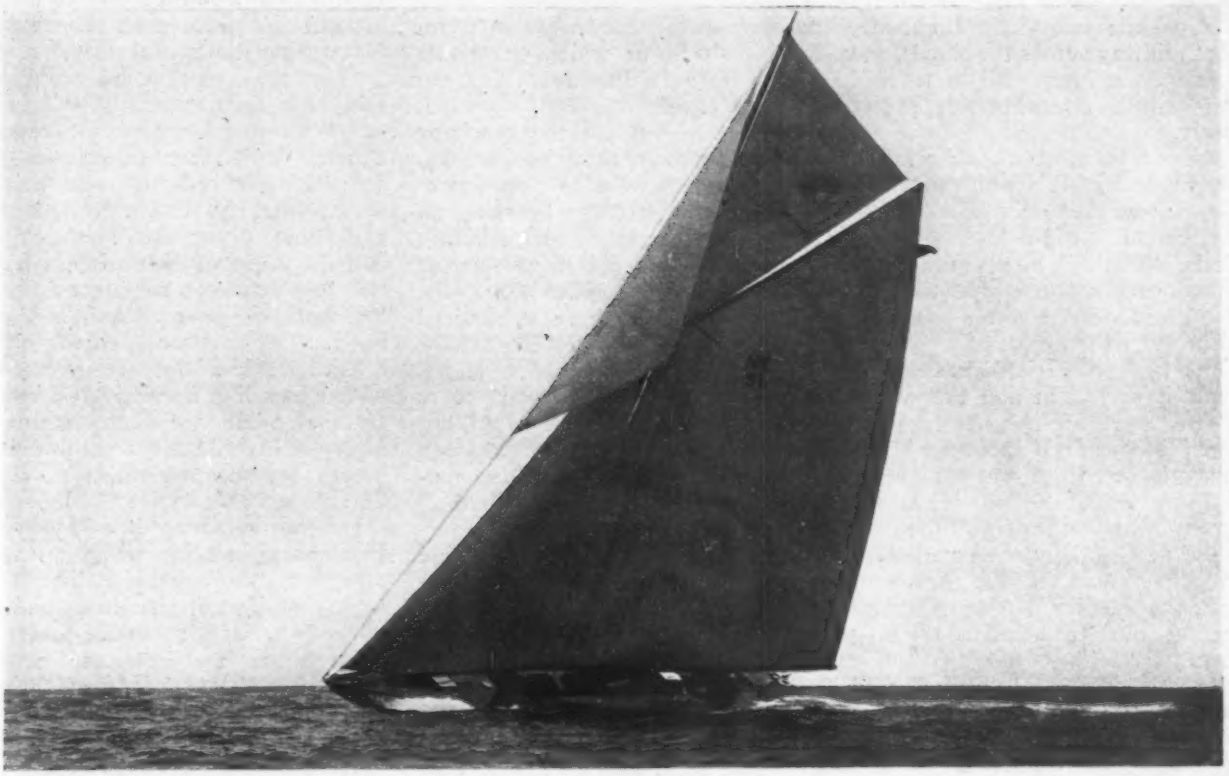
YACHTING

VOLUME XXXIII
NUMBER III

MARCH, 1923

35 Cents a Copy
$4.00 a Year



"*Harpoon* was tearing along, her tall acre of canvas catching hard puffs over the sandy bluffs of Cape Cod."

A Thrash Around the Cape

Being an Account of a 70-mile Fight on the 50-footer *Harpoon*

By C. G. DAVIS

NO doubt the skippers and crews on the old coasting schooners just making sail in Vineyard Haven were used to turning out and starting their day's work when the first gray streaks of dawn began to appear in the sky. But Saturday, August 5th, of last year, found a big fleet of racing yachts at anchor in this haven whose amateur crews were not so trained.

I was one of the after guard on the fifty-footer *Harpoon* and everything was going on aboard that sloop with the order and precision that only such a veteran yacht captain as Captain Rodstrom could command. On *Roamer,* the steam tender on which we slept and ate our meals, things were a little upset due to late hours and strenuous parties. No doubt Japanese prayers of thankfulness were said by Noda and Kesto as we all four piled into the dinghy and were rowed over to *Harpoon,* with lunch baskets, thermos bottles and spare clothes, for we might need a shift before completing the seventy-two miles over Nantucket Shoals around Cape Cod to Peaked Hill bar buoy.

It was just light enough to see silhouetted against a gray atmosphere the spars and sails of intermingled coasters and yachts, many of which were hoisting sails as we broke out our anchor and headed for the starting line. But daylight soon increased so we could distinguish the different craft, could see the big, full-rigged bark *Aloha,* the low gray flagship, *Nourmahal,* with a mark anchored out to form the starting line, and the various "fifties," "forties" and schooners which were going to race, while overhead the fleecy clouds whose tops caught the glow of the sun still below the horizon gave promise of what all yachtsmen want most—a breeze.

We had anchored away up at the head of the harbor in order to get an undisturbed night's sleep, so *Dixie,* our power tender, gave us a tow out as the air was very soft and we did not care to be late in starting. The big schooners started first; then we drifted across the starting line in company with two lumbering coasting schooners. After us came the fleet of "forties" and then the small fry, most of the latter cutting across lots to Provincetown by way of the Cape Cod canal.

What little air there was came from the westward, dead astern, so with main boom well off to port, we hoisted our spinnaker to starboard and with a strong ebb tide helping us, passed just north of Squash Meadow reef buoys. *Carolina,* that slippery black craft, pulled ahead, *Istalena* hung persistently close astern of her and both sailed a bee line course for Hedge Fence Lightship while we looked for luck in a possible northerly shift of wind by jibing our boom to starboard and holding more to the northward. *Barbara* following every move we made.

The schooners, handicapped when it comes to running, were keeping balloon sails full by tacking to leeward and two of them crossed us twice as they zigzagged down wind. We gained on them, and the "forties" in turn came up with the freshening air from astern until the two leaders in that division, *Monsoon* and *Squaw,* were abeam.

Opening day, with the boats [illegible]. Scene at dock of the Westhampton [illegible] soon be here again.

Photo by E. Levitt

Our luck hunting did not gain us anything. We lost ground as it turned out and when *Carolina* hauled up a little more northerly after passing Cross Rip Lightship, about midway across the shoals, she opened up a long lead on us, but *Istalena* hung on to her skirt pretty closely.

It was 8:08 a. m. when we luffed past Cross Rip Lightship and took in our spinnaker on our course to Handkerchief Lightship. A few of the "forties" hung onto their spinnakers but we figured the balloon jib alone did better work, as did most of the fleet.

The last time I had crossed the shoals it was calm and the wreck of a five masted schooner lay half swamped on Half Moon Shoals. Today it was calm and smooth as on Long Island Sound, with just enough in of wind to swell the sails of the fleet of handsome yachts so that they presented a beautiful sight, the keepers of the lightships hanging over the rails watching yacht after yacht as they passed.

By the time we hauled around Handkerchief Lightship for Butler's Hole buoy, just off Monomoy, there was a nice sailing breeze and the ebb tide had stayed with us up to this time. *Carolina* we timed as passing Handkerchief at 9:22; *Istalena* at 9:24, and we on *Harpoon* at 9:30. It was a poor beginning.

At Butler's Hole, the boats squared off and set spinnakers for Pollock Rip Lightship. Here we met a head tide coming across Pollock Rip Shoals and as the hardening wind brought several of the schooners piling up on top of us we kept as close up to the edge of the shoals as we dared so they would not try to go to the northard of us and blanket us under their immense sails. The breeze lightened and prevented this, so we ran ahead of them again. *Carolina* luffed sharp around Pollock Rip Lightship at 10:36, with only one schooner, the *Virginia*, ahead of her. *Istalena* came third, at 10:37, *Harpoon* at 10:44, and *Barbara*, with a couple of schooners ahead of her, at 10:58.

Now, on the wind, just able to lay our course for the Slue Lightship, sailing was much pleasanter but, oh, how those two other "fifties" had lengthened out the space between them and *Harpoon*. It was a long stern chase for us and looked then a hopeless one, for at Chatham bar buoy, outside of which we had to pass, *Carolina* was eleven minutes ahead of us and *Istalena* ten minutes as we rounded.

From here it was a beat to windward all the way along the back of Cape Cod some 40 miles to the finish at Peaked Hill bar buoy. Flattened down, so they were just two leaning shafts of white, our rivals ahead were having a royal scrap for first place.

We swung in for the beach as soon as we could clear the Chatham bar buoy, and went as close as we dared to the surf line breaking on this sandy stretch of shore before we came about. Then, as soon as our course diagonally along the beach set us off shore a hundred yards we took another hitch back in towards the beach. Off shore, where *Virginia* had stood, there seemed to be but little wind but right along the beach line we soon found that with only working topsail and No. 1 jibtopsail we had all the canvas we needed and the farther in we went the harder the wind became. Another peculiarity, common to all beaches, was that the nearer the shore the more the puffs came out square off the land. Just south of Chatham this was so apparent that the puffs let us head in towards the shore on the port, or off shore tack, and we had to bear off once as we could see a shoal ahead of us while our two rivals, confident they had us licked, were keeping a more prudent distance offshore and making longer tacks each time.

A hundred yards off the beach the tide was strong enough, but if we stood 200 yards off the lobster buoys showed a much swifter current was setting against us. So every time there was a boat's length to be gained by tacking inshore, inshore we went. I was handling backstays and, believe me, I was kept busy. Setting up, letting go, setting up again about every minute or two, while Tom, the veteran sailor with a face like an old time man-o-war's-man, stood waist deep in the after or lazarette hatch abaft the cockpit and flattened the wire jib topsail sheet on the little multiple gear hand winch, and the musical clink, clink of the pawls was constantly in our ears.

"Bob" Bavier was steering, Mr. Stachan, the owner, was in the cockpit watching everything and enjoying the game immensely, Capt. Rodstrom kept watch for the shore and sung out when we were as close to the beach as he dared go. It was good medicine, this hugging the beach, and all on *Harpoon* could see it for we'd be laying up along the beach, rails too and smoking along like a clipper in the trades, while a glance ahead showed both our rivals heading off shore a couple of points more than we were. *Barbara* was so far astern by this time we quit trying to make her out and devoted all our energy to catching the two ahead of us.

Capt. Rodstrom would stand up and scan the beach. "Vel," he'd say, with just a trace of Swedish accent, "I tink ve could go a length or two more inshore," and round we'd swing. Work cut no figure in this game; every man in the crew had the scent of battle in his nostrils and was keen for a good fight. We worked like stevedores and cut notches in our course along that beach so that a plot of our course would look like the edge of a cross cut saw—but we were gaining. Every one could see that, and the breeze was coming down now in "slammers" that buried the lee side, sometimes clear to her skylights. Bob would roll his wheel up and *Harpoon*, thoroughbred that she was, would point that long, sharp, wicked looking snout of hers a point more up into the wind, right herself out of the smother and take a jump like a porpoise, going to windward in grand style.

It had been wet weather so far on the cruise and this was the first dry nor'wester we'd had. Our mainsail was brand new, just off the loft floor, cut pretty full at that, and it began to stretch. Watching our chance as we came about, we jigged up and we jigged up and we trimmed sheets more and more, as things stretched, until finally with the power Herreshoff puts aboard his boats in those multiple geared deck winches we had the main sheet hove in "up and down." We had to kick the traveler across the deck horse when we tacked and the main sheet blocks were "married" so their cheeks showed where they'd chafed, block to block. We couldn't get that sail any flatter. It was this inability to hold our sail in flat enough that eventually lost us first place in the race.

We had hoped to gain and had worked hard but we never expected our efforts would be rewarded as they were. I don't know what time it was or just how far along the beach it was, but after what seemed about two hundred "bout ships" we came up so close to the two leaders we could see all hands aboard them craning their necks to squint under their main booms and gauge how far we were to leeward. We noticed that they, too, decided the advantage to be gained by hugging the beach was worth going after for they both stood in much closer.

Highly enthused by our gain we swung inshore as they stood out, our idea being to split tacks with them. Several hitches more were made and they, evidently satisfied that they were now in the same currents we were, got into a luffing match with each other. *Istalena* had been hanging on to *Carolina* within a couple of boat's lengths all the way, so far. This duel took them both a little farther offshore and when they came back towards the beach on the starboard tack, *Carolina* cleared us, but we would have fouled *Istalena* had we held on. We had overcome all the lead they had at Chatham Bar and were now in the game on nearly even terms.

Istalena had the right of way, however, so round we spun under her lee and the two big sloops, decks under, stood inshore, handsome as two statues. We would not tack first and it was getting to a point where most men would have sung out for room (as the Cape Cod sandy beach was not more than five boat's lengths ahead of our stem head) when *Istalena* tacked and we swung instantly with her, filled away, then made a short pilot's luff and got clear wind a trifle on her weather quarter while she drove hard to catch *Carolina,* who was still ahead.

Again we split tacks and put another jog in our course, chuckling to see them stand offshore in another duel, and that did the trick for us. We got a beautiful "slammer" off the beach that buried our lee rail and let Bobbie luff her along the shore like a train of cars. We could see them dropping back and, sure enough, the next time we met we should have had them, but, just when we expected to slide across their bows on the port tack, they both got a nice little let up in the wind, which of course, headed us, and they slid across our bows again, but so close we had to bear away hard to clear *Istalena's* stern. We went romping by and, with the impetus this filling away gave us, when we tacked a few moments later and went inshore again we crossed *Istalena's* bows and had her beaten. There was some suppressed excitement aboard the *Harpoon* when this happened. Things began to look pretty good for us. *Carolina* just did squeeze past our bows on the port tack and when we tacked and stood after her all three paused for breath by holding on this leg a few moments.

Istalena went well offshore; *Carolina's* crew were evidently getting nervous about their mast. All three yachts had hollow spars. We saw a man climb half way up her spar and examine it where the seam evidently was beginning to open and show the effects of the hard carrying-on.

We tacked inshore first, followed by *Carolina* with *Istalena,* when she stood back towards the beach, so far behind she seemed hopelessly out of it. It looked then to be either *Harpoon* or *Carolina.* When we crossed the latter's bows and sailed grandly into first place, "Oh! boy! but wasn't it a gran' and glorious feeling." We just couldn't refrain from ejaculations of joy, while Strachan, with his Scottish superstition, admonished us to "knock wood," and he pounded the deck with his knuckles.

You surely never can be sure of a yacht race till it's over. We were holding *Carolina* tucked under our lee and tacked on top of her every time she tacked, just as she had been holding *Istalena,* all the way up the beach. Unconsciously, just as they had done before, we must have stood a little too far off shore for soon, as we both stood back inshore, we looked for the beaten *Istalena.* "Great Caesar's Ghost!" —from several hundred yards astern that slippery craft, by doing what we had done, going in and hugging the beach came sliding along the shore and took her place again right alongside of us. All three yachts were not a boat's length apart and all three were having a grand duel—and mind you this was at the end of about a seventy-mile sail.

Man, Oh! Man! but it was grand sport. Never in thirty-odd years racing have I ever seen a better scrap than those three "fifties" were putting up right there and then.

Well, we were tearing along, the big tall acres of canvas catching hard puffs over the high sandy bluffs of Cape Cod that sent all three yachts over at 45 or 50 degrees of heel and pulled bulkheads an inch or more out of their housings. But the beautifully built and steel-strapped hulls, while they wrung and twisted some, never leaked a drop. Clear under, up to the skylights, they'd bury, the lee rigging tearing a perfect shower of spray that wet every one not lying flat along the weather deck. Down they'd roll and then, conned beautifully by the man at the stick, they'd point up a little and fairly leap out to windward with a sense of energy and power.

Everything was steel on those boats. Steel halyards, flexible steel jib topsail sheets, halyards and tacks, yet it was no wonder that just at this moment, though it came as quick and startling as a clap of thunder, that the shackle of our jib topsail halyard broke. Down came that sail with a slatting of canvas that sounded like the discharge of a rapid fire gun.

Harpoon luffed and Bob slung her about while her crew, like cats, took the spinnaker halyard out and hooked that on. Then around we came, the sail was set again and, of course, to add to our hard luck, the wind headed us while our two rivals, who had tacked inshore, profited by it and we could see them drawing away from us fast.

Hardly had we got going when, bang! and again our jib topsail came down by the run. This time the whole wire luff rope in the sail pulled out. So the sail was quickly taken in and the baby jib topsail passed up from below, where it was coiled ready for use under the fore hatch, and set. Then we went at it again.

We began all over, hugging the beach again, but soon came into our own. We crossed *Carolina's* bows and almost caught *Istalena,* but she just cleared us and was not a boat's length ahead. Inshore we swung and she on top of us. There was no getting inshore of her after that. We tried to but *Istalena* stood so far in to prevent us getting inshore, that once when she tacked and we came quickly about close behind her we saw a big swirl of muddy water come up where she had stirred the bottom with her keel.

We both made short hitches, all hands sweating and working like "niggers" but not an inch was gained or lost. She could outpoint us a very, very little, though we hove in the last half inch of slack that had developed, due to the stretch of the main sheet. It's a wonder that Russian hemp mainsheet had not snapped like a carrot, for that's the way it breaks when it does let go. But it stood, and with the *Nourmahal* in sight ahead marking the finish line, and both yachts just laying a course to fetch it, there was nothing else we could do. *Carolina* was evidently nursing her mast for she fell rapidly astern and so *Istalena,* with *Harpoon* close behind her, swept across the smooth sea to the finish line off Peaked Hill Bar whistling buoy. *Istalena* was timed as crossing the finish line just 1 minute and 17 seconds ahead of *Harpoon,* after 72 miles of hard sailing.

And thus ended the finest yacht race I have ever sailed in, bar none.

Start of the 610 Class at New Orleans. *Meteor Six* in foreground, followed by *Black Diamond* and *Cecile.*

The New Orleans Winter Carnival Regatta

By J. M. WATTS

THE scene of Winter power boat racing in the East shifted from Florida to New Orleans this year and it fell to the lot of the Southern Yacht Club and the Mississippi Valley Power Boat Association to pull off the only big regatta on Atlantic Coast or Gulf waters on Lake Pontchartrain, February 15 to 18. Some 27 speed boats from New Orleans and the Central West, as far north as Chicago and Cleveland, were on hand to prove to their various owner's satisfaction which was the fastest in the various classes provided by the M. V. P. B. A. classifications based on piston displacement only. W. H. Parham, chairman of the big Southern yachting organization, and A. T. Griffith, secretary of the Valley Association, had worked hard to get a representative fleet together, and the entry list included most of the boats and drivers which have been seen at the big Summer meets—and some new boats as well. It was a fine gathering and if the weather had only been a bit more propitious the racing would have been the best ever seen at a Winter racing event.

The Tuesday before the races was taken up with trying out boats and engines in the basin. Lake Pontchartrain was a little rough, but towards sundown *Miss Cadillac,* a brand new local boat, went out at high speed to try out on the open course and when turning, skidded and capsized. The air under the bow deck kept her afloat till she could be towed in. The writer, who was aboard C. A. Sporl's new 75-foot cruiser *Cocheco,* went over to extend sympathy to William Fetterly, the driver and builder of the boat, and asked him what caused the accident. "Lord knows," said Fetterly. "One minute we was stepping along fine, and boy! the next moment we was swimmin'." By working night and day she was repaired in time to run Thursday.

Miss Cincinnati in one of the Southern Yacht Club "pens".

By the next day interest in the race grew to fever heat, and all the sport-loving population were out at the West End watching the crews putting the finishing touches and adjustments on their hydroplanes.

Thirty racers had arrived by this time, and were accommodated on shore in the "pen," where the yard crane hoisted them in and out, while others were at the inner pier where one of the big bucket-dredges was fitted with slings to handle them. Naturally the greatest interest was taken in the local boats, *Miss Dubonnet, Lessie, Evelyn, Lady Orleans* and *Miss Cadillac,* but there was always an admiring crowd about the visiting boats. The *Baby Holo,* a sleek, black racer with speed in every line, attracted great attention. This boat, designed and driven by "Dare Devil" Crowley and owned by

Off in a bunch in the single-engine championship. *Miss Chicago* out in front and *Century Tire* in the foreground.

Horace E. Dodge, differed from the others in her peculiar turtle-back stern and general stream-line contour.

Commodore W. B. Wilde of Peoria had the much admired *Meteor Six*, a bright red enameled beauty, out on frequent trial spins in which he handled her masterfully.

Thursday, the day scheduled for the first races in competition opened with a stiff northerly blow which made it unwise for the frail hydros to venture out on the open course on the lake. So a mile course was staked out along the canal basin and spurts of single boats against time were run (as the canal was too narrow for boats to run in competition), with the following speed results:

Margaret, 34.44 miles; *Ethel XI*, 42.85 miles; *Cecile*, 44.44 miles; *Black Diamond*, 45 miles; *Miss Cincinnati*, 49.31 miles; *P. D. Q. VI*, 38.29 miles; *Meteor Six*, 52.17 miles; *Doc's*, 56.64 miles; *Miss Dubonnet*, 65.09 miles.

Miss Terre Haute was making a run down the New Basin at 52 miles an hour, and in slowing down at the end the engine backfired and set fire to the oil in the bilge. Bryon Casebeer and Forrest, the owners, had an extinguisher on board, but she burned so fiercely it could not get the flames under control. Had they had another extinguisher they could have saved her, but there was just time to open the sea-cocks and sink her close to shore, letting her crew scramble up the bank to safety. She was hauled out Friday morning for repairs.

Hopes ran high that the cold north wind would abate and that the postponed race could take place outside, but it continued stormy the next day and further speed trials were run in the canal.

Miss Peoria, whose runs on the previous evening were stopped by darkness, completed them with an average speed of 28.7 miles per hour. *Peggy* made 46.63 miles; *Century Tire*, 64.86 miles; *Miss Illinois*, 36.63 miles.

Saturday morning dawned bright and clear. The northwest storm had blown itself out and a light breeze from the south ruffled the lake. Conditions were ideal when, promptly at 3 P. M., the first race started. This was the 151 class, distance 5 miles, results as follows:

Margaret III, 11 m. 52 s.; *Miss Peoria*, 11 m. 58 s.; *Lessie*, 13 m. 35 s. Second race, 610 class, 10 miles: *Meteor Six*, 13 m. 20 s.; *Peggy*, 13 m. 32 s.; *Cecile*, 15 m. 18 s.; *Evelyn C*, 16 m. 27 s.; *Elanar*, 17 m. 37 s. Third race, 215 class, 5 miles: *P. D. Q. VI*, 9 m. 5 s.; *Margaret III*, 9 m. 9 s.; *Miss Peoria*, 11 m. 56 s. Fourth race, 320 class, 5 miles: *Ethel XI*, 8 m. 26 s.; *P. D. Q. VI*, 8 m. 28 s.; *Margaret III*, 9 m. 49 s. Fifth race, 1100 class, 10 miles: *Arab VII*, 14 m. 7 s.; *Cecile*, 14 m. 59s.; *Doc's*, 15 m. 29 s.

P. D. Q. VI with A. C. Strong and George B. Carpenter, Jr., aboard.

The single-engine championship

Century Tire, owned by C. J. Venn, doing close to 65 miles an hour in the canal.

Baby Holo, owned by Horace E. Dodge, hitting the high spots on Lake Ponchartrain.

The Southern Yacht Club house is one of the finest yacht club buildings in the United States.

was to be the final race of the day but the wind had suddenly risen at sunset, so this race was postponed, even though the contestants were out warming up for the race. In the races that were run *Arab VII* won her class after a most exciting tussle with *Cecile,* coming up from the 610 class, and *Doc's* from the 725 class.

Doc's led *Arab* at the start, and *Meteor Six* came rushing up from a poor start. *Arab* and *Meteor* went inside the first stake on the second lap, and *Arab* had to go back, giving *Doc's* a big lead. Though the *Meteor* was leading at this time, she developed engine trouble which put her out of the race, and she would have been disqualified anyway if she had won. *Doc's* and *Arab* were racing neck-and-neck when *Doc's* broke her steering gear, but repaired it in time to finish first, with *Peggy* next.

In the 320 class the only woman contestant, Mrs. Ethel Hanley in *Ethel XI,* won by two seconds over *P. D. Q. Margaret III* was a close third.

In the 610 class Commodore Wilde's *Meteor Six* led from the start, with *Peggy* and the *Black Diamond* pushing her hard till the latter's steering gear broke and she was forced out. *Evelyn C* could not seem to get going right, and *Peggy* finished an easy second.

The 151 class race was a close one with *Margaret III* nosing out *Miss Peoria* by only six seconds, with the New Orleans entry *Lessie,* driven by A. W. Sinclair, third. *Margaret* passed *Miss Peoria* at first then stopped with engine trouble. Gamely starting in pursuit she again passed *Miss Peoria* just before the finish.

In the 215 class, *P. D. Q. VI* made a spectacular race of it after passing *Margaret III* near the finish and winning by four seconds.

The yachts of the Southern Yacht Club turned out in force all dressed with flags for the occasion and, crowded with guests, enjoying the famed Southern hospitality. Among the fleet were two new 75-foot cruisers, the *Jetta,* belonging to Mr. Leichtenstein; the *Cocheco,* owned by Mr. C. A. Sporl; Mr. John N. Stewart's *Vesta II,* and Mr. Fox's *Brenda.* Commodore Ernest Lee Jahncke's big houseboat, *Aunt Dinah,* entertained a gay party.

The arrangements for the races and for handling the crowd were excellent and the commodore and officials of the Southern Yacht Club must have been pleased with the enthusiasm of the spectators, who found points of vantage in the huge club house and piers and also on a big grandstand erected at the water's edge, where the entire course could be clearly seen. The race committee and judges had accommodations on a big barge anchored so as to form the starting and finishing line, and furnished with every convenience so that the races were run off with promptness and efficiency.

The weather Sunday showed some improvement, but it was still rather rough for the racers. However, the drivers were all anxious to make the attempt in spite of the danger.

The race for the 610 class was won by Commodore Walter Wilde, with his *Meteor Six,* beating the *Peggy,* Fred Schram, by seven seconds. The *Meteor Six* covered the 10 miles in 13 minutes and 30 seconds. The *Black Diamond* was third, and *Cecile,* fourth.

Championship Race

Miss Dubonnet, Miss Chicago, Lady Orleans, Baby Holo, Century Tire, and *Miss Cincinnati,* made a fine start with *Baby Holo* at the pole, but about 30 yards behind the rest. However, her driver gained by making a fine turn and began to pick up on the *Century Tire,* C. J. Venn, which was in the lead. *Miss Dubonnet* was racing *Miss Chicago* for third position, and finally drew ahead. Louis Disbrow in the *Century Tire* was having a hard fight with the *Baby Holo* down the back stretch when the *Holo* jumped out of the water and threw Crowley, and Cooper, the mechanician, over-

(*Continued on page* 178)

Some of the drivers. Left to right, Louis Disbrow, Mr. & Mrs. C. E. Hanley, H. A. Parsons, Walter Wilde, Ralph Sidway and his mechanician.

Get Ready, Boys!

Proper Preparation for an Ocean Race Is Half the Battle

By SAMUEL WETHERILL

THE big race to Bermuda starts June 12th. There will be a dozen or more starters. Who will win? And which boats, even though they may not win, will have the safest and easiest passage, and which crews will have the pleasantest recollections stowed away for use at future gamming parties?

Plain sailing in small craft on long trips is no soft snap. And ocean racing is a whole lot harder on boat and crew than ordinary cruising—for it is drive, drive, drive, every minute of the time. Your craft—her hull, her spars, her rigging, her sails—all must stand up under the constant hammering. And your crew must have the necessary equipment to do the driving with, and be in shape to do the driving. With this in mind, let's see what can be done in the matter of preparation, so that your boat and your crew will be in the best possible shape to stand the gaff.

The Hull

It goes without saying that the hull of the boat should be as sound and tight as possible. A leaky boat means hard, dirty work for the crew to keep her pumped, and the chances are good that dirty bilge water will get over cabin floors, slosh into lockers, and ruin clothes and provisions. Besides, a leak, under the relentless pounding of old man Ocean, may easily become a serious matter. Therefore, it is easy to see that a sound, tight hull is of vital importance.

Bottom and topsides should be clean and smooth. All racing men appreciate this. A rough paint job, uneven seams, squeezed-out putty, a foul bottom, anything at all that the water can get a grip on, will hold the boat back on every mile of the seven hundred or so which you will cover going down to Bermuda. A smooth, clean hull is a decided asset, while a rough or foul hull is a liability.

While you are hauled out for your bottom overhaul, go over every part of your rudder. See that every pintle, gudgeon or strap is in good shape. You can't be too careful about your rudder. An accident to it puts you in a nasty mess and it is practically impossible to make repairs while wallowing around in the Gulf Stream. A ship without a rudder is a pretty hopeless proposition.

At the same time, give your steering gear a thorough overhaul. Replace any worn parts, take up lost motion wherever possible, and be as sure as you can that it is in shape to go through the hardest kind of a test. You may be able to make port with a deranged steering gear, but you are going to lose a lot of time doing it.

On Deck

Nothing adds more to the discomfort of you and your crew than wet bunks, wet blankets, and wet floors. Leaky ports and cabin trunks, dripping hatches and skylights, are an abomination, and will go a long way towards robbing you of the fighting spirit which is so necessary in a long grind. So do everything you possibly can toward making the topsides of your craft leak-proof.

Go over every port hole carefully. Be sure that the wing nuts work freely, and that all gaskets make a watertight fit. Do the same with hatches, skylights, or any other deck openings. Square hatches should be equipped with dogs or straps. Skylights should have covers, and battens for them. Make a working test of all deck openings with a few buckets of water, or a hose if one is available—for they must not only keep out the rain, but must be proof against solid water with a real kick in it.

Spars and Rigging

A rigid inspection of spars may prevent a lot of trouble. See that your masts are properly stepped, look to your mast wedges and provide well-fittings collars to prevent leaks at these points.

Goose-necks and gaff jaws come next. A broken goose-neck is a mean thing, but a broken gaff is worse. Test out cleats and travelers, for even these usually reliable parts of your equipment may not be in shape to stand the hard-continuous strain of ocean work.

Standing rigging is all-important, for a parted shroud, while it may not mean disaster, is a difficult thing to repair. Wire rigging usually weakens at the splices, so go over all splices carefully, and have them properly wrapped and served —ditto on boom and gaff bridles. Inspect all blocks, and have them well oiled and working freely—a bent pin means a chafed rope. Turnbuckles should be well greased, set up, and equipped with cotter pins or lock nuts to prevent turning. A frozen turnbuckle is a mean thing to wrestle with, and it is just possible that in a long, hard race, you may want to take up some of the slack in stretched rigging.

Look to your spreaders. They must stand a terrific strain. And make your shrouds doubly secure in the spreaders, for if the lashings chafe and part, out pop the shrouds, and you may easily crack your stick, or possibly lose it.

All halyards should be inspected carefully for wear, particularly the parts which are in the blocks when the sail is doing its work, for it is here that they will chafe and break. Inspect lace lines, clew and tack lashings, reefing tackle, outhauls, etc., and renew any doubtful stuff.

Rig peak downhauls, on your mainsail at least—for sails don't always come down on the run when you want to reef in a strong wind under way. A method recommended by Aemilius Jarvis, the well known Canadian yachtsman, is to reeve the downhaul through a block with a big shive in it at the end of the gaff. The two ends are then spliced around the boom abreast of where the gaff end comes when lowered on the boom. In this way you get maximum leverage and snugness of stow. In taking in the sail you can catch a turn of this over a cleat on deck to keep from being jerked overboard if the sail is slatting.

Also rig crotch tackles for reefing. On large craft block and tackle are usually rigged to ring bolts on each quarter. On smaller craft, a line spliced into these ring bolts would do, made long enough so that you could take a couple of turns around the boom and make fast. Boom tackles to keep the booms steady in a seaway or when the sails are slatting should be rigged, and an eye on the rail for the forward block should be provided.

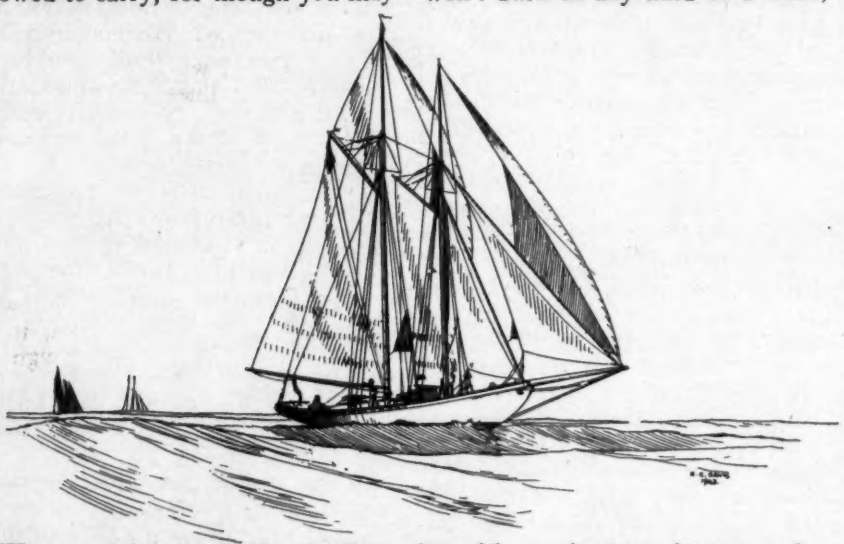
Sails

Sails play a vital part in the success or failure of a boat in an ocean race as well as in a shorter affair. Working sails should be cut full rather than flat, for ocean work is seldom windward work, and sails with plenty of flow have the most drive for work when sheets are eased.

Examine your sails carefully for weak spots, particularly at clew,

tack, throat and peak, for here is where the greatest strain comes, and weaknesses develop. If you carry battens, see that they are only a loose fit, and an inch or two shorter than the pocket, or they will quickly work a hole in pocket or the sail itself. Many a sail has been ripped half way from leach to luff by the slatting of battens when lowering away in a blow.

Light sails are just as important in an ocean race as in a short one, if not more so. For even in the lightest airs the ocean is never quiet, and then is the time when your light sails will fill and pull you along, while your heavier working canvas hangs in shapeless folds, and slats and bangs around at every heave and roll of the ship. Take all the light sails you are allowed to carry, for though you may not use all of them, yet the lack of any one of them may easily cause the loss of valuable time. It was Captain Tom Day who, commenting on his voyage to Gibraltar in the little yawl *Sea Bird,* stated that he believed he would have shortened his trip an entire day if he had had a balloon jib aboard.



"When your light sails will fill and pull you along while your heavier working canvas slats and bangs around at every heave."

And don't neglect to see that your light sails set properly. Many cruising men use them very seldom, and for that reason don't pay much attention to them. But in a race it is a different matter. Last year, in the Brooklyn Challenge Race, one of the schooners was badly handicapped for several hours by a poorly fitting fisherman's staysail, which caused not only the loss of a lot of time, but a lot of cussing on the part of the crew who struggled valiantly to make it behave. So try out all your light sails beforehand, as it is easy to have them recut if they don't set well.

Carry a trysail along, too. It will come in mighty handy in a bad blow, or in case you should be unfortunate enough to rip your mainsail.

Navigating Equipment

The average small cruiser is usually woefully deficient in at least two decidedly important pieces of equipment for real seagoing work —that is in the matter of a real compass, and a real binnacle. Some of the larger boats have permanently installed compasses and binnacles, though the compasses are seldom properly compensated. But on many smaller craft the compass is generally a small portable affair, usually to be found knocking around in a locker. Some boats don't even boast of a binnacle, and of those that do, they are almost useless for real work; the lights won't burn in any kind of a wind, or even in no wind at all they frequently expire peacefully after burning a short time.

You are going to be working under a tremendous handicap unless you have a good compass, properly compensated for deviation, and lighted by the best oil or electric binnacle that you can find. The compass and binnacle should be fixed, not portable; the card should be 5-inch or larger, and of the quick acting variety, as a sluggish card is not only terribly annoying, but it makes it almost impossible for the helmsman to keep even a reasonably straight course.

Few compasses, even in wooden craft, are free from deviation, due to the magnetic influence of iron ballast, motors, tanks, steering gears, stoves, etc. So, if you want to steer an accurate course and save your navigator a lot of worry, get your compass properly compensated by a professional compass adjuster, who will d the job quickly and accurately, and give you a deviation card for any small errors which may remain.

Test out your binnacle under actual working conditions before you start. Don't take it for granted that it will work just because the man in the shop said so. The oil kind smoke, sweat the glass, and refuse to burn half the time. The electric variety suffer from burned-out bulbs, weak batteries, corroded connections, etc. Sometimes the light throws a shadow on the card when the boat heels. If you finally succeed in getting a binnacle that will stay lit, throw an even light on a properly corrected, steady card, you will have done a whole lot towards making night steering accurate and pleasant, and not wobbly and bothersome.

Carry a good log, with two lines and rotators. Many a log has been lost by fouling on some obstruction, or by a fish grabbing it. Logs are not always accurate, and should therefore be tested out beforehand.

You will also want a sextant, chronometer (properly rated), parallel rulers or course protractors, dividers, barometer, charts, etc. A pelorus or azimuth attachment might be carried, but they are usually of little value on small craft. The individual navigator will have his own ideas about what books on navigation he will take along, but with a Bowditch, azimuth tables, nautical almanac and a copy of Henderson he will have a pretty good start. A good pair of binoculars may help you to pick up land sooner than with the naked eye, and a pair of night glasses will do the same after sundown. Much may depend on your raising and recognizing the land as soon as you can—so don't forget both kinds of glasses.

Stores and Water

Plenty of stores should be taken along for at least double the time you expect to be at sea. Fresh stores will last about three days, bread can be kept fairly fresh for six or seven days, and onions, potatoes, eggs, as long as you will want. Take a plentiful supply of real old-fashioned hardtack, and some other varieties of crackers for an occasional change of diet. All kinds of canned goods must, of course, be an essential part of the stores, especially the kinds which can most easily be heated and served. An excellent plan is to take along some cold, cooked meats, so that you won't have to hit the "tin willie" and goldfish for two or three days anyway.

Water is the most essential thing

aboard the ship. You can't be too careful about assuring yourself of a plentiful supply of fresh, potable water. First, be absolutely sure that nothing but clean, uncontaminated water goes into those tanks. Then, to make doubly sure that you won't face a water famine, take along a goodly supply of water in jugs or bottles, and be sure that it is stowed where it will stand the least chance of getting smashed. Don't depend on your tanks; put aboard this extra supply, besides a case or two of your favorite brand of soft stuff.

The Galley

We have all heard that an army travels on its stomach. Exactly the same thing applies to the crew of an ocean racer. Nothing will cause demoralization and loss of efficiency and "kick" quicker than lack of food, or a steady diet of cold canned stuff. The boat which can keep its galley functioning in bad weather, and produce even the simplest of hot meals with reasonable regularity, will have a crew in far better mental and physical shape to push her over the line a winner than the boat on which the galley goes out of business just as soon as rough weather starts in.

It is a good plan to have two stoves, one a coal burner for real work, and a kerosene or alcohol affair, hung in gimbals, for emergency work. Remember that a coal stove exhausts out of the stove pipe into the open air, while all other varieties add their noxious odors to the already overburdened air in the cabin. The odors from stoves have been responsible for a good many cases of seasickness, so keep the coal stove going as long as possible, and you and your crew will be much the better for it.

Most of the liquid fuel stoves work fairly well in fair weather, but as soon as it comes on to blow, and you begin to pitch, roll, and wallow, they are prone to smoke, flare up, leak, or even catch fire and blow up. Many galley fires have been caused by them, but very few by coal stoves. A single burner oil stove, in gimbals, will often be the means of getting something hot for all hands when the other varieties fail.

Stowage of galley gear is very important. It is annoying and expensive to have plates, cups, saucers and other crockery engaged in a finish fight, and the anvil chorus set up by pots and pans is sure to keep a sleepy crew awake, and their nerves on edge. As for dishes, cups, glasses, etc., I have found it a good plan to wedge them in their racks with a lot of old newspapers —they will stay put better, and stop their noisy chatterings. All pots, pans and the like should be securely lashed, and also given the newspaper treatment where necessary.

Probably the hardest thing to locate is a man who can stick it out in the galley in bad weather. There are few men who are galley-proof in a seaway, with hatches battened down and fresh air at a premium, and everything hopping all over the shop. It is without doubt the worst job on the boat, as many a man who is perfectly well as long as he stays on deck succumbs immediately if he attempts to stay in the galley any length of time. And as the health and spirits of the whole crowd depend on being properly fed, the craft which boasts a seagoing cook is indeed fortunate.

When you want tight skylights and deck openings.

The proper stowage of everything movable is of great importance, not only in the galley, but out of it. You are pretty certain to get a good jolting on any ocean passage, and there is nothing worse than to have things adrift all over the ship, or not to be able to find things at night when you are in all kinds of a hurry. Jugs, lanterns, oil cans, books, navigating instruments, should all be placed where you can find them, and lashed or wedged in place. Spare sails should be stowed where they are "getatable" without disturbing some chap who is below "caulking off." Be sure everyone knows just where they are, so that they can be found without having to hunt for a flashlight first. Same thing applies to oilers and boots.

Do your stowing and lashing—on deck and below—before you start, and be ready for anything that comes. Don't be caught unawares, and have to take a man away from his deck duties, or interrupt his watch below, to do things which should have been done beforehand.

Don't neglect to carry along a spare pump. Your regular pump may get badly clogged, or break down entirely, and bailing out bilge water with buckets and old tomato cans is a dirty, discouraging business, to say the least.

Have a couple of extra lanterns in the locker, and some spare wicks. A good reflector lantern is a fine thing to have for working on deck at night, as it shoots a good light right where you want it, and at the same time keeps the glare out of the helmsman's eyes. There is an electric hand lantern on the market, which gets its current from two dry cells, throws a powerful light, and should be a fine thing to have handy. Several small electric torches, with plenty of extra batteries, are almost indispensable for all kinds of work, including reading the compass card when the binnacle goes out of business.

Carry enough spare gear along to be on the safe side. Some manila for a halyard, sheet, or outhaul, cotton for lace lines, and plenty of marline and light line. Palm, needle, sail twine, etc., should of course be on all craft.

At least two ring life preservers should be carried, lashed in the mizzen rigging of a yawl or ketch, or in the main rigging of a schooner. Have the lashings of such strength that they will break if you give a husky pull on the ring—for when you want one, you want it quick, and you won't have time to dash below for that knife which should have been in your pocket.

Fire is an ever-present danger. By all means, carry along at least two patent extinguishers; see that both are full, and that everyone knows just where to put his hands on them, night or day. Place one forward, in or near the galley, and another one aft somewhere, say on a bulkhead, well up and out of the way. It wouldn't hurt to have a can of refill liquid along.

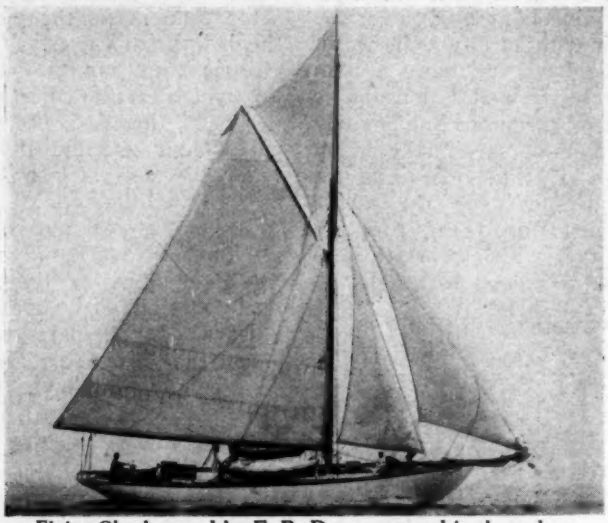
Be sure and rig life lines. Start from the bowsprit, lash them securely to the shrouds about waist high, and lead them all the way aft.

(*Continued on page* 178)

Bermuda Race News

EVERYTHING is set for the Bermuda Race, and when June 12th arrives it will see the biggest fleet setting sail for the little patch of land 662 miles southeast of us that has ever started in an ocean race of this length.

Already twenty entries have been received and there are half a dozen more owners who have signified their intention of entering, but who have waited to get the conditions or to see how their boats, if they happen to be building, are coming along.



Flying Cloud, owned by F. B. Draper, entered in sloop class.

Down in Bermuda they are just as keen on the event as they are here and the Royal Bermuda Yacht Club, which will handle the finish, has made all arrangements to take care of that end of the race. The finish will be an imaginary line southeast by east from St. David's Head Light, which is at right angles to the last leg of the course. The committee boat will mark the outside end of this line in good weather, but if the weather should be such that a committee boat cannot stay out the time of the boats finishing will be taken by the committee ashore when St. David's Lighthouse bears northwest by west from the yacht. After the yachts have crossed the line pilots will be put aboard and they will be taken in to St. George's Harbor and then up to Hamilton.

It is probable that the Bermudians will have an entry in the race themselves. This may be one of the original Bermuda-designed, built and rigged pilot cutters, 48 feet in length; or if this is not possible on account of taking the boat away from her work, a Bermudian crew may be in charge of a yacht chartered in the States.

With ordinary weather conditions the contestants ought to cover the course from New London to St. David's Head in from four to five days. The best time ever made was by the schooner *Amorita* in 1909, when she took only 78 hours, 19 minutes and 15 seconds to sail 670 miles. In that race the *Margaret* finished only 2 minutes behind her on actual time. *Amorita*, however, was 70 feet on the water line and 99 feet over all, while the conditions were unusually favorable, as is shown by the fact that the smaller *Margaret* has to her credit in that race a run of 257 miles in 24 hours. In this race the *Margaret* was driven so that the putty was squeezed out of her seams.

Some new entries, beside those mentioned in the last issue of YACHTING, are: the *Black Hawk*, owned by W. H. Hand, Jr., New Bedford, Mass.; the *Sou'wester*, a new ketch 42 feet long being built by W. E. Baker and associates, and a duplicate of the two boats which Nutting and Leinster are sailing across the Western ocean this Summer; the *Mary Ann*, one of Alden's *Malabars*, owned by John Parkinson of Boston; the *Surprise*, that fine little schooner owned by M. S. Kattenhorn, and the *Flying Cloud*, a sloop 59 feet long, owned by F. B. Draper, and the *Little Hope*, a 48-footer owned by B. K. Sharp. Mr. Redmond Keresey, Jr., has written that he will enter his new 75-foot schooner *Lismore II* if any other entries of this size or larger are received, and if two or more boats in a larger class will enter, a prize will be given in this class.

Circulars containing all the conditions (which appeared in the last number of YACHTING) and entry blanks will be sent upon request. Here is the list of the entries so far received, or whose owners have stated their intention of starting:

Class B—Schooners, Yawls and Ketches, 53 feet to 70 feet o.a.

Seafarer	63′	S. B. Coffin
C. A. Dolliver	55′	Oliver H. Perry
Haswell	60′	Com. Aemilius Jarvis
L. W. Berry	60′	Roger Griswold
Bagheera	66′	Carol Brown & others
Ariel	53′	J. & R. Johnson
Hilda (yawl)	53′	W. R. Palmer
Sunbeam	60′	S. D. Baker
Black Hawk	63′	W. H. Hand, Jr.
Memory (yawl)	59′	R. N. Bavier
Isabel Q	65′	Francis Minot

Class A—Schooners, Yawls and Ketches, 35 feet and 52 feet o.a.

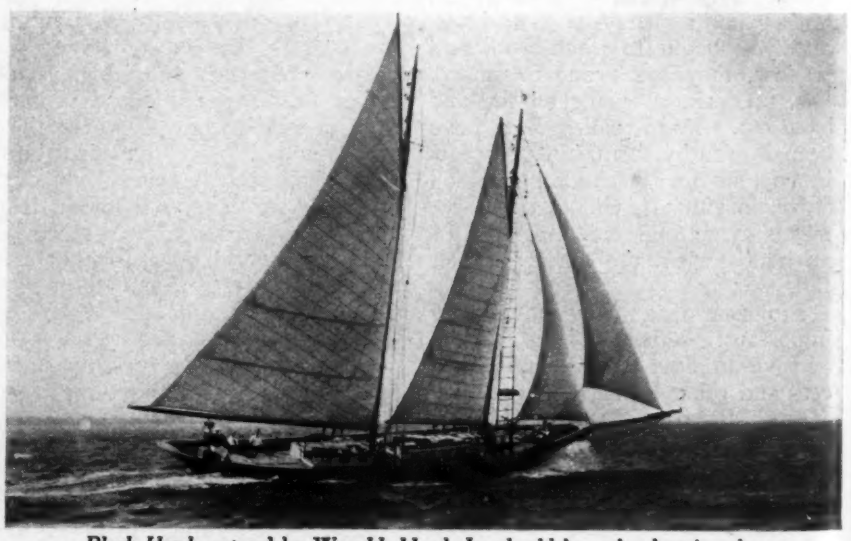
Malabar IV	45½′	J. G. Alden
Wanderer	38′	David Henwood
Malabar II	41½′	W. A. Drayton
—— (yawl)	51½′	E. R. Behrend
Surprise	44′	M. S. Kattenhorn
Sou'wester	42′	W. E. Baker and Associates
Mary Ann	41½′	John Parkinson

Sloops, not over 60 feet o.a.

Flying Cloud	59′	F. B. Draper
Little Hope	48′	B. K. Sharp

Large Schooners

Lismore II	75′	Redmond Keresey



Black Hawk, entered by Wm. H. Hand, Jr., should be at her best in a breeze.

The Town Cut entrance to St. George's. "Gates his Bay" in foreground. St. David's Island in background. Little house on point stands on site of Pembroke Fort built by first settlers.

View just inside Town Cut, looking across to St. David's Island. Smith's Island, where the castaways lived, in middle distance. The "little round iland" where the *Deliverance* was completed, in foreground.

The Discovery and Exploration of the Bermuda Isles

Part Two: Building of the Pinnaces and the Voyage to Virginia

By J. T. ROWLAND

THROUGHOUT all this hardship the bearing of all hands was exemplary; and we are not surprised to find that on the very day of the landing, though he had been without food or sleep for over three days, the doughty Sir George is busy catching fish for the whole company. He went out in the long-boat with some sailors and a net and took over 500 fish, if Strachy is to be believed, at the first haul! All hands were amazed and delighted at the beauty of the place, with its hundreds of bays and little islands, and they were immensely cheered at the abundance of food which it provided, so that instead of an isle of devils they came soon to consider it a little paradise. The only dissention which arose during the nine months of their enforced residence had its origin in the fact that a large number of the colonists wished to remain there permanently instead of going on to Virginia!

In a few days' time, under the admirable leadership of their governor, the temporary colony was organized and all hands were put to work. Some were set to stripping the wreck while others, under the shipwright, busied themselves felling trees and shaping timbers and planks with which to build a new vessel. Hunting and fishing parties were organized, with strict orders to take no more than the whole company could eat in two days, "lest the meate spoile," and some were told off to make salt and to build houses. Sir George Summers embarked upon an exploration of the islands, and returned with his long-boat filled with many bodies of wild swine which he had killed not far from the present city of Hamilton. "Wherefore," says Silvanus Jordan, "my opinion of this Iland sincerely is, that it is in truth the richest, health-fullest and most pleasing land (the quantity and bignesse thereof considered) as ever man set foote upon."

After a safe landing on the "Iles of Demons" had been accomplished by the company of the good ship *Sea-Venture,* under the admirable leadership of Sir George Somers and Sir Thomas Gates, and temporary measures had been taken for the subsistence and comfort of the shipwrecked colonists, the minds of the seafaring members of the expedition naturally turned to the all important question of constructing some sort of a vessel in which they might continue their voyage to Virginia. Since this was the Year of Grace 1609, just following the planting of the first English colony upon the shores of the mainland, it was obvious that the castaways had little hope from passing vessels: their salvation was squarely up to themselves to accomplish.

However, this situation was not one to frighten English seamen of that day. Somers himself had been a captain in some of the incursions upon the Spanish Main and he was not a man to be easily daunted. Although over 60 years of age his first act upon getting safely ashore was to take the long-boat and go exploring. He returned from this expedition with the boat full of carcasses of wild swine—enough to supply the whole company of 150 with fresh meat for several days.

This accomplished, he promptly betook himself upon a more extensive trip in the course of which he made a map of the islands. A copy of this was originally enclosed with the letter of William Strachy, from which we quoted extensively; but unfortunately it seems to be no longer in existence. Here is what Strachy says about his activities:

". . . Sir George Summers coasted the Ilands, and drew the former plot of them, and daily fished and hunted for our whole company until the seven-and-twentieth of November, when well perceiving that we were not likely to heare from Virginia, and conceiving how the Pinnace which Richard Frubbisher was a-building would not be of sufficient burthen to transport all our men, . . . he consulted with our Governour (Sir Thomas Gates) that if he might have two carpenters and twenty men over with him into the maine Iland he would quickly frame up another little barke for the better sitting and convenience of our people."

Naturally his request was quickly granted; and soon the scent of freshly hewn cedar perfumed the air, while the stalwart colonists under the direction of the carpenter, "a painefull and well experienced Shipwright and skillful workman," felled trees, hewed them into timbers and sawed out planks. They were working in a virgin forest which boasted some fine trees, larger than one will find anywhere in Bermuda today, but they found the wood "brickle" (brittle) and "wonderous false inside" so that it was a difficult task to get out clear, sound planks. Nevertheless they persisted, Somers (this is Sir George's own spelling) and his crew working somewhere on the main island, probably on the west shore of Castle Harbor; while Mas-

ter Frubbisher set up his yard at the head of Buildings Bay, still so called, a little nook on the eastward side of St. George's Island. He had the advantage of position when it came to getting the new-built craft to sea, as we shall presently learn.

While these industrious labors are going forward it will be only fair to notice another and even more daring attempt which was made to gain contact with the Colony in Virginia.

Not long after the shipwreck it was deemed wise by the Governor to despatch Henry Ravens, mate of the *Sea Venture,* to attempt to reach that distant shore in the ship's long-boat. This was a pretty desperate venture and it is interesting to note that Sir Thomas was actuated by concern over the fate of the colony in Virginia rather than by fear for their own condition in Bermuda! He wished particularly to appoint a Vice-Governor to control the people in his absence and to let them know that he was still alive and would be along eventually to inquire into their behavior. So poor Ravens had to bear the message.

"We made up our long-Boate," says Strachy, "in fashion of a Pinnace, fitting her with a little deck, made of the hatches of our ruined ship, so close that no water could goe in her; gave her sayles and oares; and intreating with our Master's Mate, Henry Ravens, we found him easily wonne to make over therewith, as a Barke of Aviso, for Virginia. . . ."

Now, right in the same sentence, come the sailing directions under which the unfortunate Ravens put to sea. " . . . Virginia, which being in the height (latitude) of 37 degrees, five degrees from the Iland (in) which we were, might be some 140 leagues from us, or thereabouts, reckoning to every degree that lies North-east, and Westerly, twenty-eight English leagues. . . ."

This is pretty involved, but no more awkward, probably, than the navigation of the day. It is worth a little study. What Strachy appears to be doing is estimating the distance between two points, having given the difference in latitude and the course. He figures 28 leagues (84 miles) run for each degree of northing made good on a northeast or northwest heading—which is about right. Then, assuming the difference of latitude to be 5 degrees, the total distance would be 140 leagues (420 miles). This would be all right if it were not for the unfortunate fact that he made a bad blunder in assuming the course to Cape Henry as Northwest. It is nearly W.N.W., and the distance therefore is greater by almost 200 miles than he estimates.

Nearly all the early navigators made this mistake of placing Bermuda too near the American coast. Perhaps this was what proved fatal to Ravens and his companions, for he appears never to have been heard from again.

There is a reason for the confusion of these old chaps on the longitude of places. Latitude they could get by meridian altitude of the sun or the "height" of the Pole Star, but for longitude they were dependent upon dead reckoning, since no means had been found of ascertaining Greenwich Mean Time for accurate use at sea. (I say "ascertaining" rather than "keeping" because G.M.T. was ascertained, by means of lunar observations, before it was "kept" by chronometers.) Now, dead reckoning is one thing in a ship that goes "where she looks" and another and far different thing in an old wagon that won't lie up within six points of the wind and spends more time drifting than sailing. The marvel is that they were able to estimate their longitude with any accuracy at all.

Buildings Bay, where the *Deliverance* was built.

While the building of the two pinnaces was going on in the fall and winter of 1609 some of the people became so enchanted with the climate of the Bermudas and the "abundance of fishes and fowles" that they looked upon their casting-away as an act of kind Providence, and when it came to thinking of leaving this garden spot for the dangers and hardships of the continent, they "couldn't see it." Apparently Gates had made a rash statement that some of the colonists would have to be left behind in Bermuda. The people soon construed this threat into a promise!

But with two boats building and room for all hands, Gates would not permit any of his little flock to drop out; and the result was a mutiny which resulted in the execution of one man. Then in desperation the workmen threw down their tools and took to the woods, leaving work on the ships at a standstill. Gates passed the buck to Somers. That great old sailor, who for all his rank of Admiral had been daily laboring on his pinnace with his own hands, went after his recalcitrant workmen in so determined a spirit "as hee brought most of them in." We may well believe it: Bermuda was not big enough to hold Sir George and a mutineer!

The work then continued. "We had brought our Pinnasse (i.e., the one being built by Frubbisher) so forward by this time" that "the eight-and-twentieth of August we having laid her Keele, the sixe-and-twentieth of February we now began to caulk; old cables we had preserved unto us which afforded Ocam enough; and one barrel of Pitch and another of Tarre we likewise saved, which served our use some little way upon the Bilg. We breamed her otherwise with lime made of Wilk-shels, and an hard white stone which we burned in a Kiln, slaked with fresh water and tempered with Tortoyses Oyle." No need to worry about such people!

"The thirtieth of March being Friday, we towed her out in the morning Spring-tyde from the wharf where she was built, boying her with four Caske in her runne only. . . ." This is a little difficult: were the casks ballast or were they really buoys to help her over a shoal spot? In the latter case they must have been *under* her run, of course. Perhaps she was too deep aft to get out.

"We launched her unrigged, to carry her to a little round Iland . . . both nearer the Ponds and some Wels of fresh water . . . the Channell being there sufficient and deepe enough to lead her forth when her Masts, Sayles and all her Trimme should be aboard her. She was fortie foot by the keel, and nineteen foot broad at the Beame, six foote floore; her Rake forward fourteene foot, her rake from the top of her Post (which was twelve foot long) was three foot; she was eight foot deep under her Beame; between her Deckes she was foure foot and an halfe, with a rising of halfe a foot more under her fore castle, of purpose to scowre the Decke with small shot if at any time wee should be borded by the Enemie." Here's foresight for you. Think of castaways having to build a *warship!*

"She had a fall of eighteen inches aft, to make her steerage and her

Great Cabbin the more large; her steerage was five foot long and six foot high, with a close Gallerie right aft, with a window on each side and two right aft. The most part of her timber was Cedar . . . her beams were all Oke of our ruined ship, and some planks in her bow were Oke, and all the rest as is aforesaide. When she began to swimme . . . our Governour called her the *Deliverance* and she might be some 80 tunnes of burthen."

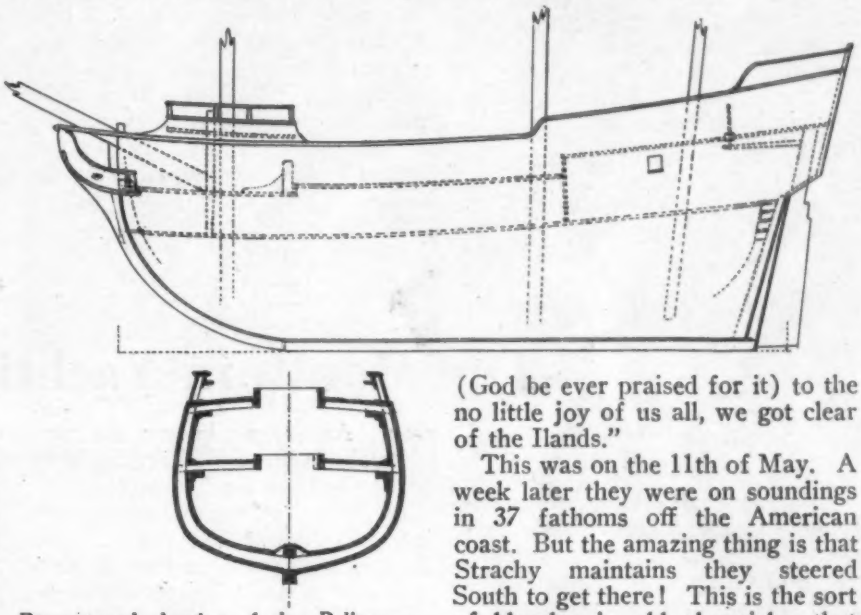
Perhaps this is not the place for a treatise on Elizabethan shipbuilding, but when one reads a description of a vessel only 40 feet long between perpendiculars having a "burthen" of 80 tons, to say nothing of galleries, Great Cabin, steerage, forecastle and 'tween-decks, he may be pardoned for trying to draw a sketch to see what this marvelous craft looked like. It is not altogether an easy task even to do roughly, for some of the measurements do not "gee" with others. Figure 1 is therefore little better than a running broad guess, but—try it yourself!

The usual pinnace of that period was a decked boat with something resembling a schooner rig. But this little craft was square-rigged, as we shall see presently. Indeed, she seems from her description to have been a diminutive ship rather than a proper pinnace. The steerage was at this time what its name says—the place where the vessel was steered, in our idiom the "pilot house," though located, of course, in the stern. It was open on the forward side, to command a view of sails and deck. If one puts this "right aft," as the description seems to demand, there is no choice but to put the Great Cabin under it. The mid-section sketch shows a surprisingly good shape, though we may readily believe she needed some ballast to keep her on her feet. (Fig. 2.)

"About the last of April," Strachy continues, "Sir George Summers launched his *Pinnasse* and brought her from his building bay in the Mayne Iland into the Channell, where ours did ride, and she was by the Keele nine-and-twentie foote: at the Beame fifteen foot and an halfe: at the Loofe (?) foureteene, at the transam nine; and she was eight foot deepe, and drew six foot water, and he called her the *Patience*." In these two tiny vessels the people were to set out for the Capes of the Chesapeake, 630 miles away.

They had buried five of their company on the island, and three ran into the woods and stayed behind after all. To offset in part this loss in numbers two infants, a boy and a girl, had been born during the sojourn in Bermuda.

Before quitting the island Sir Thomas set up a memorial in the form of a cross, and "in the middest of the Crosse our Governour fastened the Picture of his Majestie in a piece of Silver of twelve pence, and on each side of the Crosse hee set an inscription graven in Copper, it. the Latin and English to this purpose. 'In memory of our great Deliverance, both from a mightie storme and leake: wee have set up this to the honour of God. It is the spoyle of an English ship of three hundred tunne, called the *Sea Venture*, bound with seven ships



Reconstructed drawing of the *Deliverance*, built by the castaways at Bermuda.

more (from which the storme divided us) to Virginia, or Nova Britania, in America. In it were two Knights, Sir Thomas Gates, Knight, Governour of the English Forces and Colonie there: and Sir George Summers, Knight, Admirall of the Seas. Her Captaine was Christopher Newport, Passengers and Mariners she had beside (which came all safe to land) one hundred and fiftie. We were forced to runne her ashore (by reason of her leake) under a Point that bore South-east from the Northerne Point of the Iland, which we discovered the eight-and-twentieth of July 1609.'"

The Passage to Virginia

It was a task of some danger and considerable difficulty to "lead forth" the *Deliverance* pinnace from her harbor. Somers and Captain Newport went ahead and buoyed the channel, but even so she took bottom once, and for a few minutes the adventurers saw the toil of a year wasted; but the stout little vessel crushed the coral rock on which he had grounded, and so kept on.

Once clear of "Gates his Bay" she had still the reefs which surround Bermuda to thread. The experience of Master Ravens now proved of value, for he had spent the better part of a week trying to get clear in his long boat before he finally departed by way of the opening through which the *Sea Venture* so fortunately reached land in the first place. This opening bears to the southeast. Realizing that this was the only way they could get out, the masters of the two pinnaces bore up for it. "The wind served us all that day; and the next (God be ever praised for it) to the no little joy of us all, we got clear of the Ilands."

This was on the 11th of May. A week later they were on soundings in 37 fathoms off the American coast. But the amazing thing is that Strachy maintains they steered South to get there! This is the sort of blunder in old chronicles that sets the learned historians arguing. We know, of course, that a southerly course would never have taken them to Virginia; so we can dismiss the error with a chuckle, for it seems to show that worthy Master Strachy was not quite himself once his cockle shell got to sea. Her course in the smooth water inside the reefs was indeed southerly, and it may well be that the chronicler never knew when it was changed.

Nevertheless, he tells a good story: ". . . for seven days wee had the wind sometimes fair, and sometimes scarce and contrarie: in which time we lost Sir George Summers twice, albeit we still spared him our mayne top-sayle, and sometimes our fore course too." This is clear evidence that the *Deliverance* was square rigged.

"The seventeenth of May we saw change of water, and had much Rubbish swimme by our shipside, whereby wee knew wee were not farre from Land." There followed three days of moderate breezes

during which the soundings gradually decreased from 37 to 19 fathoms, and "the twentieth, about midnight, we had a marvellous sweet smell from the shoare, strong and pleasant, which did not a little glad us. In the morning, by day breake (as soone as one might well see from the foretop) one of the Saylers descryed Land. About an hour after, I went up and might discover two Tummockes to the Southward, from which (Northward all along) lay the Land which we were to coast to Cape Henrie.

"About seven of the clock wee cast forth an Anchor, because the tyde . . . makes a strong Ebbe there, and the wind was but easie . . . but the wind coming Southwest a strong gale about eleven, we set sayle againe, and having got over the Barre, bore in for the Cape.

"This is the famous *Chesipiack* Bay, which we have called (in honour of our young Prince) Cape Henrie, over against which . . . lyeth another Head-land, which we called in honour of our Princely Duke of York Cape Charles; and these lie North-east and by East and South-west and by West, and they may be distant each from the other in breadth seven leagues. . . . Indeed it is a goodly Bay and a fair, not easily to be found."

Reaching the little settlement of Jamestown the adventurers were sorely distressed to find the place in the grip of famine. Sir Thomas, with his usual energy, went about saving the remnant of the population and transporting them to a more favorable land; but in the nick of time Lord Delaware entered the Bay with fresh supplies and the colony was saved. But doughty Sir George Somers, who was never content to remain long in one place, told glowing tales of the rich provender to be had from the Bermudas and requested permission to return there to fetch supplies to the needy colony. This next (and last) quotation is from Captain John Smith's *History*. ". . . so, upon the 19th of June, he imbarked in his cedar ship, about the burden of thirty tunnes, and set saile.

"Much foule and crosse weather he had, and was forced to the north parts of Virginia, when refreshing himself upon this unknowne coast, he could not be diverted from the search for the Bermudas, where at last with his company he safely arrived. . . ." The time had come, however, in which the old Knight's strength of body no longer answered the "ever memorable courage of his minde."

"In that very place which we now called Saint George's towne this noble Knight died, whereof the place taketh the name. But his men, as men amazed, seeing the death of him who was even as the life of them all, embalmed his body and set sail for England. . . . This cedar ship at last, with his dead body, arrived at Whit-church in Dorsetshire, where by his friends he was honourably buried, with many vollies of shot and the rites of a Souldier, and upon his tombe was bestowed this epitaph:

"Alas Virginias Summer so soon past,
"Autumne succeeds and stormy Winter's blast,
"Yet Englands ioyfull Spring with ioyfull showers,
"O Florida, shall bring thy sweetest flowers."

The Month in Yachting

The Six-Meter International Match

All arrangements have been completed for the International Six-Meter Team Match to be sailed this year in England. A team of four boats to represent the United States will be selected by the committee of the Seawanhaka-Corinthian Yacht Club after a series of trial races to be sailed off Oyster Bay some time in June. The match will be sailed on the Solent from August 1st to 9th, under approximately the same conditions as the race held here last year. After this match one of the team will be selected to sail for the Seawanhaka Cup on the Clyde the latter part of August. This cup was won by the *Coila III* last September and the Seawanhaka-Corinthian Club immediately challenged for a race this year.

Two new boats are building for the event, one for Commodore W. A. W. Stewart of the Seawanhaka-Corinthian Yacht Club, from designs by H. J. Gielow, and another new boat has been designed by Fred Hoyt for H. B. Plant. Both are being built at Nevins yard. *Lea* of last year's team is having some slight alterations made in her lead keel and will be seen in the trial races, as will most of the other six-meter boats that were raced last year. As far as known the two boats above mentioned are the only ones to be built for the race.

As much stronger breezes are found on the Solent than in this country it is probable that at least two of the boats selected will be built or rigged for strong breezes. The difficulty in this is that a boat built and rigged for Solent conditions would probably have but little chance in the trial races if these are sailed in average American conditions. The selection committee, however, will bear this in mind in choosing the American team.

End of an America's Cup Defender

It does not seem fitting that any yacht that has defended the America's Cup should come to an end without a fitting obituary, but such seems to be the fate that has overtaken the schooner *Madeline*, which successfully defended the famous trophy in 1876 over the New York Yacht Club course. In that year the *Madeline* was owned by J. S. Dickinson and she raced against the Canadian challenger *Countess of Dufferin*. She was built in 1868 and after having had a number of owners as a yacht, around 1900 she was taken to Tampa, Florida, where she was used as a commercial vessel for a number of years. She later became a sponge fisherman and this last winter, as she was unfit for service at sea, she was stripped, dismantled and towed up the Hillsborough River, Florida, where her bones are now rotting in the sands. Rather an inglorious ending for an America's Cup defender!

Royal Thames Yacht Club Puts Up International Cup

A new international cup has recently been offered by the Royal Thames Yacht Club of England to foster international racing between Great Britain and the United States, British overseas possessions, and all nations in the International Yacht Racing Union. This cup is to be known as the Cumberland Cup and at present is open to yachts in the International Six-Meter Class.

There are already a number of international cups to be raced for and it seems doubtful if the American Six-Meter Team will challenge for the Cumberland Cup this year, especially as the challenge must be in by the 15th of April.

A challenge for the cup will be accepted only from one yacht from any yacht club, so that the races, if sailed, would be in the nature of a match rather than a team race.

Northport Yacht Club Has New One-Design Class

In line with the revival of yachting, and particularly of small boat racing on the Sound, since the war, the Northport Yacht Club of Northport, Long Island, has organized a one-design class of 18-footers which will be seen on the Sound this Summer.

It is good to see this organization getting back in the racing game and, located as they are, it is probable that the class will be seen at various regattas on the Sound, outside of their home waters. The boat selected by the club is the *Mexan,* an 18-footer, 6 feet beam and 18 inches draft, and seven are being built at Patchogue.

The following members have signed up for boats: A. H. Ostrom, Harry E. Donnell, O. G. Carter, Henry F. Richardson, Frederick H. McCann, Frank H. Morrell, Oakley R. Delameter. The officers of the Northport Yacht Club are: president, Harold N. Eldridge; vice-president, Daniel P. Morse; secretary, Benj. Carll; treasurer, S. Leroy Ackerly. We congratulate the officers and committees of the club in getting this new class started.

St. George's Yacht Club Holds Dinghy Cup

In the article on Bermuda dinghy racing, which appeared in December YACHTING, mention was made of the Royal Bermuda Yacht Club and the Hamilton Dinghy Club as being two of the leading organizations interested in dinghy racing.

The St. George's Yacht Club of St. George's, however, claims the distinction of having originated dinghy racing and at the present time holds the cup. If the sentiments of its members count for anything, the organizations at the other end of the colony will have great difficulty in wresting it from its present location.

The harbor of St. George's has been dredged to a depth great enough to accommodate large ocean-going vessels, and this section of Bermuda is rapidly becoming an important maritime port.

Another Trans-Atlantic Small Boat Voyage

In our article last month on long ocean voyages in small boats we took in naturally only those of the last fifty or sixty years of which there was some record. However, the seamen of three hundred years ago certainly did not fall behind those of the present day in daring as is witnessed by a notation on a chart of the Bermuda Isles, printed in 1626.

On this chart is a note stating that "about mid-summer 1616 five persons departed from these Isles (Bermuda) in a smal open boat of some three tunn and after seven weeks arrived al safe in Ireland; ye like has scarce been heard in any age." Even in those hardy days this voyage was considered quite an undertaking.

Victory, St. George Y. C., leading *War Baby* and *Shamrock* at the finish of race for the Dinghy Cup at St. George, Bermuda

Lake Erie and Long Island Sound to Meet in Victory Class

In line with the International Crew Match, sailed last summer between Canadian and Eastern yachtsmen, are the plans that have just been completed for a race this summer between the sailors of Lake Erie and those on the Western end of Long Island Sound.

Several of the Victory Boats went to the eastern end of Lake Erie, to members of the Buffalo Yacht Club, last year and a race has been arranged this summer between the owners of these boats and the Victory Class Association of Long Island Sound for a series of races to be sailed annually between two crews representing each club or association.

No attempt will be made to transport the boats as, being one-design yachts this is not necessary, but the two crews of three or four men each representing the Long Island Sound Association, will go to Buffalo this Summer to race two crews from the Buffalo Yacht Club in Victory boats provided by them, the race to be sailed on Lake Erie. The following year a return match will be sailed when the Buffalo yachtsmen will come to Long Island Sound.

This is a step in the right direction and will do a lot to popularize the sport, particularly on Lake Erie.

The Regatta Committee Club, a New Organization

At the recent Motor Boat Show in New York a new organization was launched for which there has been a distinct need and which, if the plans of the organizers are carried out, will be an important factor in future power boat races held in this country. The new organization is to be called the Regatta Committee Club and its membership is open to those who have actively participated in the management and handling of power boat and yacht races.

At all of the larger racing meets of the country many men prominent in the sport are present and it has been from the ranks of these that the officials for the races were drawn. The new organization gets these men together in a closer bond and should eventually lead to a better standardization of racing practice and racing rules, particularly those relating to the handling of regattas.

A luncheon was held during the Show at which some thirty charter members were present and at which time the following officers were elected: President, Wilbur A. Young, vice president, Arthur J. Utz, secretary-treas., Ira Hand.

To mention the full list of charter members would be to reprint the list of officials on the various racing circulars, but among them might be mentioned, Ira Hand, H. E. Boucher, "Jerry" White, E. E. Church, W. E. Gibb, L. Thompson and many others.

Metacentric Height

By WM. J. STANTON

TWO men crawled out of the crashing surf on Soldier Key. The tail-end of a "norther" had given a wallop to that neighborhood, and incidentally was the cause of their present predicament. And as they turned around and gazed sadly off shore, and picked seaweed and sea shells out of their touselled hair, one of the castaways realized that this "tail-ender" was nothing more than an incidental factor in the loss of their handsome forty-foot motor cruiser which had suddenly heeled a half hour ago and gone to the bottom like a bag of ashes.

An incidental factor this tail-end of the "norther" surely was, and not the main cause of the disaster, as the other man, the owner of the boat, so stubbornly wanted to believe. After exchanging some uncomplimentary remarks to each other, the owner and his friend, stretched out on the hard white sands and went to sleep.

After a refreshing nap, they sat up, saw the clear blue skies, and just as clear blue water, flecked here and there with the dying white caps of the storm, felt the balm of the tropic air, and the dryness of what clothes were left to them after their battle in the breakers.

"I told you before we left Charleston not to load up with that infernal cargo of pig-iron, called ballast," caustically spoke the friend as he hunted through his pockets and found some wet matches, and still wetter tobacco. "That's just why we're here, like a Crusoe and a Friday."

"Ballast be hanged," replied the boat owner, "how was that the cause of it, you lunkhead? Why, the *Gladys* was the stiffest motor boat that ever left Charleston Harbor, and that's exactly why I loaded the 'pigs' into her—to make her stand up, of course. What do you suppose I put the ballast in for—to fly light?"

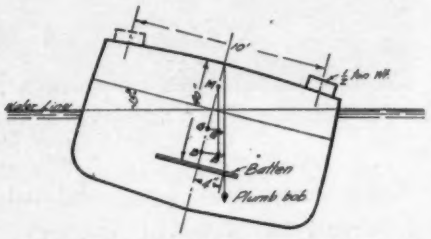
"Better if you had," snapped the friend. "If you knew anything about the metacentric height of your own boat, or any other boat for that matter."

"Metacen—meta— what, — what line of hog-latin is that? What do I know about this highfalutin stuff you read about and can never soak in," snarled the motor boat owner.

"That's just it," testily answered his friend, "You and a tribe like you, who run around loose, are the cause of more marine accidents in a month than a host of drunken tug pilots would be in a year; and all because you just want to ignore something simple that would save lots of life and property."

"All right, professor; shoot the simple stuff," blandly remarked the owner as he glanced seaward to see where his motor boat was not, and then comfortably laid back on the white sands with a battered life preserver for a pillow, and gazed contentedly into the blue-shot heavens.

"I've got to make a sketch before I can explain this," said his friend as he searched his vest pocket. "My Eversharp must be out there on the bottom with your *Gladys*, and my fountain pen is full of wind." The friend searched around and found a stick in the seaweed and coral. Cleaning it off and drawing a figure with it on the hard beach, he



Cross section of boat showing method of figuring metacentric height.

exclaimed: "Here's a cross-section of your boat heeled to about fifteen degrees for convenient illustration. There's your water line, your upright and your inclined center lines, and here's your center of buoyancy, or B," as he made a jab with his stick into the approximate center of the figure below the water line. "Here," he continued, "is your center of gravity, or G, a little above B on the vertical center line when upright. The center of gravity doesn't change its position, but the center of buoyancy moves as the boat heels. Now we draw a vertical line through B', the new center of buoyancy, and when this vertical intersects the vertical center line of the boat, that point is what we call the metacenter. Simple, ain't it?" inquired the friend.

"Yes—go on, it's too simple for me just now. I'll wait with much simplicity until you finish," was the sardonic reply of the amused owner.

"The distance," went on the friend, "from M the metacenter to G is called the metacentric height, and from G to G' the length of what we call the righting arm."

"The righting arm multiplied by the tons displacement of your boat gives you the moment—the power your boat has to right herself when inclined away from the vertical. Now when GM is small, the righting power is small, and if large the righting power is large also. "But," continued the friend with some triumph in his voice, "too much righting power in a heavy seaway is worse than very little or none at all!"

The motor boat owner sat up suddenly and blinked at hearing this. "And that is just what happened to your poor old *Gladys*, somewhere out there on the Gulf bottom. Her center of gravity was so low that it gave a large righting lever, and this large righting lever gave such a violent see-sawing in the heavy swell that it acted just like a great pendulum and simply swung your boat over and sunk her." The friend sat down on the white beach, drew a floral design on the sand, as a diversion from the deep technique he had just unloaded on his motor boat friend.

"Now," resumed the friend of the motor boat man, "if you had about eight or ten inches of metacentric height in the *Gladys*, instead of the probable three or four feet which she actually did have, there is no doubt that we could have weathered that 'norther,' and all its relatives with it, in such a fine seaboat as the *Gladys* would have been, had you not made a pig iron freighter out of her. So don't get the idea that throwing ballast into your bilges is going to give you a more seaworthy boat than you had before, unless you have a radically wrong designed boat in the first place. Why, the big Atlantic liners have only a few inches of metacentric height, and with their high freeboard (which by the way adds buoyancy as they lay over in the sea) can easily and gracefully outride the wildest ocean storms. So a moderate metacentric height and a reasonable freeboard will give you what you denied the *Gladys* and sent her to 'Davy Jones'—and nearly sent us along with her." The friend of this negligent and indifferent boat owner sat down and rested his hands behind his head, as though that was the end of his lecture on this near-mysterious factor called the metacentric height of ships.

But the motor boatman had just become interested, and forthwith remarked with some tantalization: "Yes, that's all very well to say so and so much of—what do you call that thing again—met—her, meet-her where—at the fountain?"

"Metacentric height," tartly spoke the guest.

"But how do you find the darned thing anyway? How do you catch and measure this unseen thing, is what I want to know, but don't ever expect to find out," boldly spoke the motor boat owner as he surveyed his friend with no little scorn.

"Oh that's the easiest and most interesting part of it; and what gets me is why those who do know about this most useful and vital information—why they don't practice it more and spread the knowledge and importance of it broadcast," regretfully answered his friend. "You can determine that by what they call the 'inclining experiment.' This is done simply by mooring your boat in still water on a day when very little wind is blowing. Have her in ordinary trim for cruising, that is with the customary stores and equipment aboard. But be careful to either fill up or empty entirely, all gasoline and water tanks, so that the action of liquids in partly-filled tanks will not influence the boat's behavior during the test. Now suspend two plumb-bobs, one forward and one aft, on the vertical center line of your boat, from any convenient place where they can hang free for a length of, say, three or four feet for small boats. If possible hang the bobs in buckets of engine oil so as to prevent swinging, and see that the plumb-lines exactly coincide with the vertical center line of the boat when in the upright position.

"Now, either shift a dead weight on deck, or a live weight in the form of a number of men, from the center of the boat to the starboard side. Note with your plumb-line how much of a deviation has been made by the inclination. Then shift this weight to the port side and again note the deviation from the vertical. If the readings are slightly different, average them. We will say that the plumb-lines are forty inches long; the weight shifted is a half a ton, five feet across the deck; the deviation of the plumb-line is four inches; and the displacement is twenty-five tons. Now make a formula as follows, and figure:

$$\frac{\frac{1}{2}\text{ (ton)} \times 5\text{ (ft.)} \times 40\text{ (in.)}}{4\text{ (in.)} \times 25\text{ (tons)}}$$

"1.1 feet = GM, the metacentric height."

The mathematical man turned seaward suddenly, and shouted—"there's a power boat—hurry and wave your shirt, so we can escape from this Robinson Crusoe prison of ours."

After getting aboard the rescuing boat our friend of the figures inquired of the rescuers if they had been caught in the late storm. "Sure," they replied, "caught right in the middle of it and rode out like a duck." The owner of the boat was aboard and informed the rescued boatmen that his twenty-five ton boat was a marvel in big seas, and that he always saw to it that she had no more than one foot of metacentric height. He then said that he felt he could ride out any storm like a Northumberland lifeboat.

Breeze, a Modern Sailing Canoe

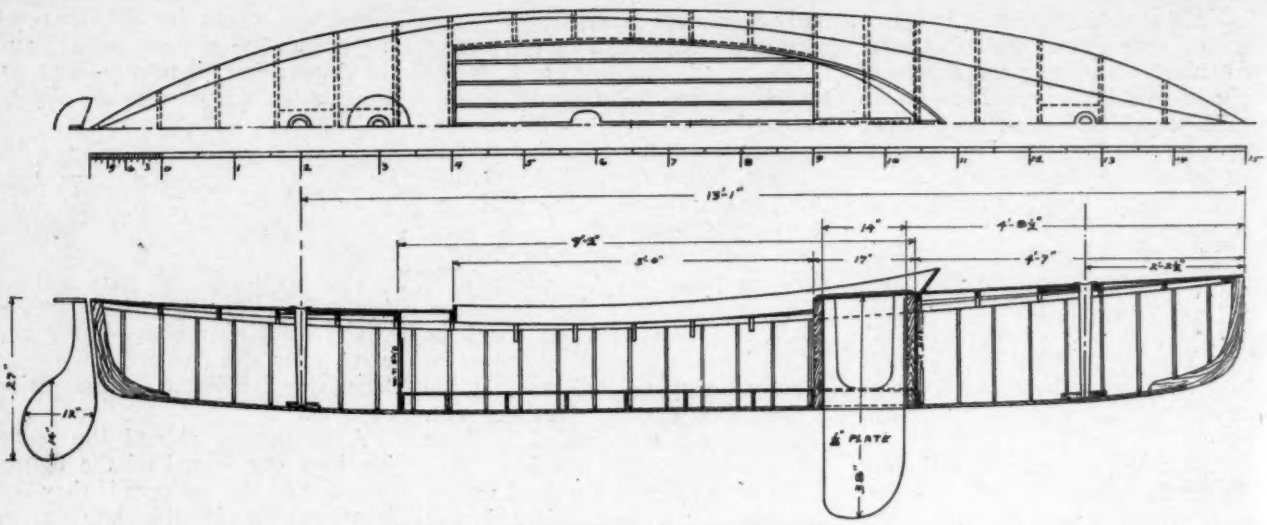
YEARS ago, before the dawn of the gasoline engine and the "flivver," yachting was a game for rich men, and those with red blood but small pocketbooks did their cruising in a decked sailing canoe. Cook and captain bold, crew and camp commandant were rolled into one, and that one the owner of the ship with no one to say "stay here" or "go there." It was the best kind of cruising and made self-reliant men. But played out with the coming of the cheap automobile.

Now, with the congestion of the roads and the ever increasing cost of gas, the sailboat is coming again into its own and, with it, the "poor man's yacht" as the sailing canoe was affectionately called in the old days. Memories have been revived, old barns searched and canoes that have the dust of twenty years on them have been repaired and put overboard again. It is safe to say that more canoes have been afloat in the last two years than in the twenty preceding.

In the old days a canoe built by Stevens, Eggleston or Gilbert ranked with an Elgin watch and the owner of one was proud indeed. Most of these craftsmen are gone now and the few that are left have retired long ago. Once in a while one of them can be persuaded to try his hand again for old times sake.

Here are the plans of a canoe designed by Dwight S. Simpson and built in 1919 by E. G. Eggleston, one of the best of the old timers. She is owned and sailed by Mr. Arthur A. Marwin on Lake Hopatcong, who says she has given him

Interest in the decked sailing canoe is reviving rapidly. Here is a modern 16-footer, the plans of which and table offsets for building, appear on the following page.



Construction plan of 16-foot decked sailing canoe.

more pleasure than any other thing he has ever possessed. The *Breeze* differs considerably from the old canoes in that she is larger and more powerful, being intended originally for a long cruise down the Great Lakes with two men and their duffle. She would doubtless have been called a canoe yawl once, and while she can keep going in weather that would drown out the smaller canoes she is still easily portable and two men can take her anywhere. She is cedar planked, finished in mahogany and with her nickeled trimmings is a beautiful creation.

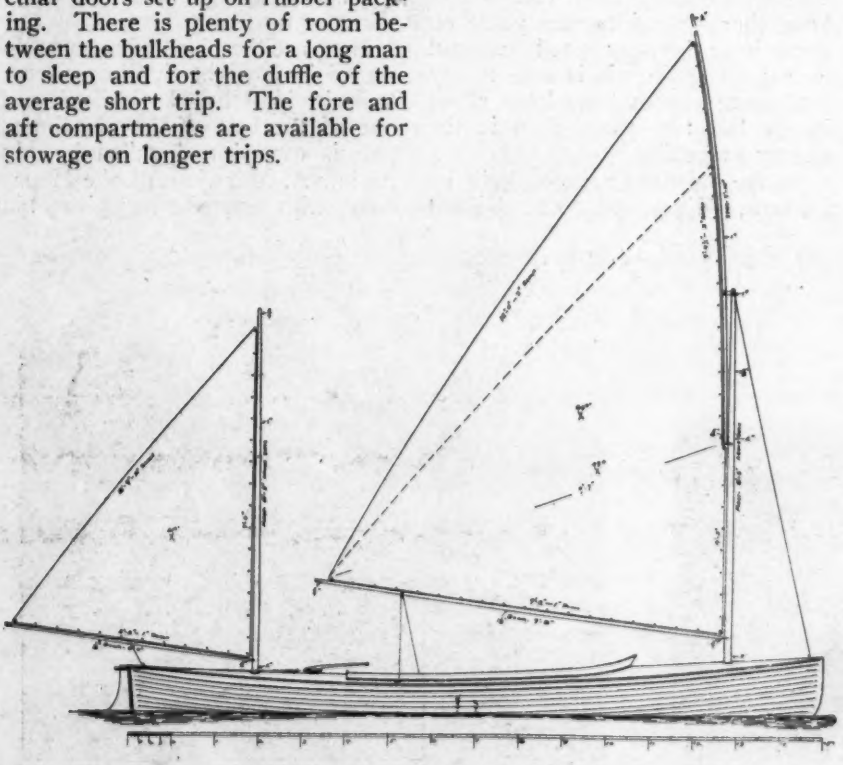
Breeze is 16 feet long, 38 inches beam, 23 inches deep forward and 14 inches amidship. She has two watertight bulkheads fitted with circular doors set up on rubber packing. There is plenty of room between the bulkheads for a long man to sleep and for the duffle of the average short trip. The fore and aft compartments are available for stowage on longer trips.

OFFSETS

FEET FROM	BOW	1ST	2ND	4TH	6TH	8TH	10TH	12TH	14TH	15TH	STERN	BACK SETS STEM	RABBET	BEARDING LINE	BACK SETS STERN	RABBET	BEARDING LINE
HEAD RABBET	–	3-3	1-12	0-8	0-2	0-2	0-2	0-9	1-4	2-0	–						
" SHEER	23-0	21-6	19-14	17-5	15-7	14-5	14-0	14-8	16-2	17-13	19-0						
HALF-WIDTH "	0-3	6-7	11-4	16-4	18-2	18-14	18-14	17-1	13-6	6-5	0-4						
" 20" WL	0-3	6-5										0-1	1-9	2-3			
" 18" WL	0-3	5-14	10-13									0-2	1-11	2-5			
" 16" WL	0-3	5-7	10-1	15-15					11-6	6-9	0-4	0-4	1-12	2-7			
" 14" WL	0-3	4-15	9-4	15-4	17-14	18-14	18-15	17-1	11-2	6-1	0-4	0-6	1-15	2-10			
" 12" WL	0-3	4-6	8-7	14-6	17-6	18-13	18-13	16-13	10-14	5-13	0-4	0-8	2-2	2-15			
" 10" WL	0-3	3-13	7-6	13-5	16-13	18-7	18-8	16-8	10-8	5-8	0-4	0-13	2-11	3-8			
" 8" WL	0-3	2-15	6-3	12-0	16-0	18-0	18-3	15-14	9-13	5-1	0-4	1-7	3-7	4-9	1-1	2-4	3-4
" 6" WL	0-3	2-1	4-13	10-4	14-12	17-4	17-8	14-12	8-9	4-6	0-4	2-13	5-3	6-12	1-4	2-8	3-7
" 4" WL	0-3	1-4	3-2	8-0	12-10	15-8	15-11	12-8	6 7	3-0	0-4	6-4	9-2	11-4	1-11	4-0	5-4
" 3" WL	0-3	0-7	2-3	6-9	11-4	13-13	14-2	10-11	4-13	1-15	0-4	10-12			2-5	6-10	8-10
" 2" WL			1-4	5-0	8-1	10-14	11-8	8-3	2-15	0-9					4-10	12.0	
" 1" WL				3-2	5-1	6-8	7-6	4-9									
" KEEL		0-6	1-0	2-2	2-9	2-9	2-9	2-8	1-6	1-0							

DIMENSIONS TO OUTSIDE OF PLANKING IN INCHES & SIXTEENTHS

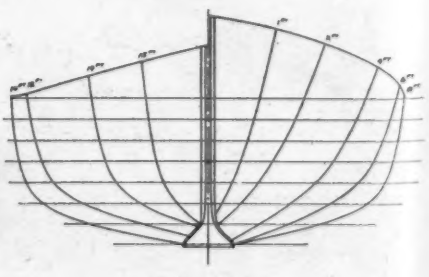
Table of offsets of *Breeze*, for those who may want to build her.



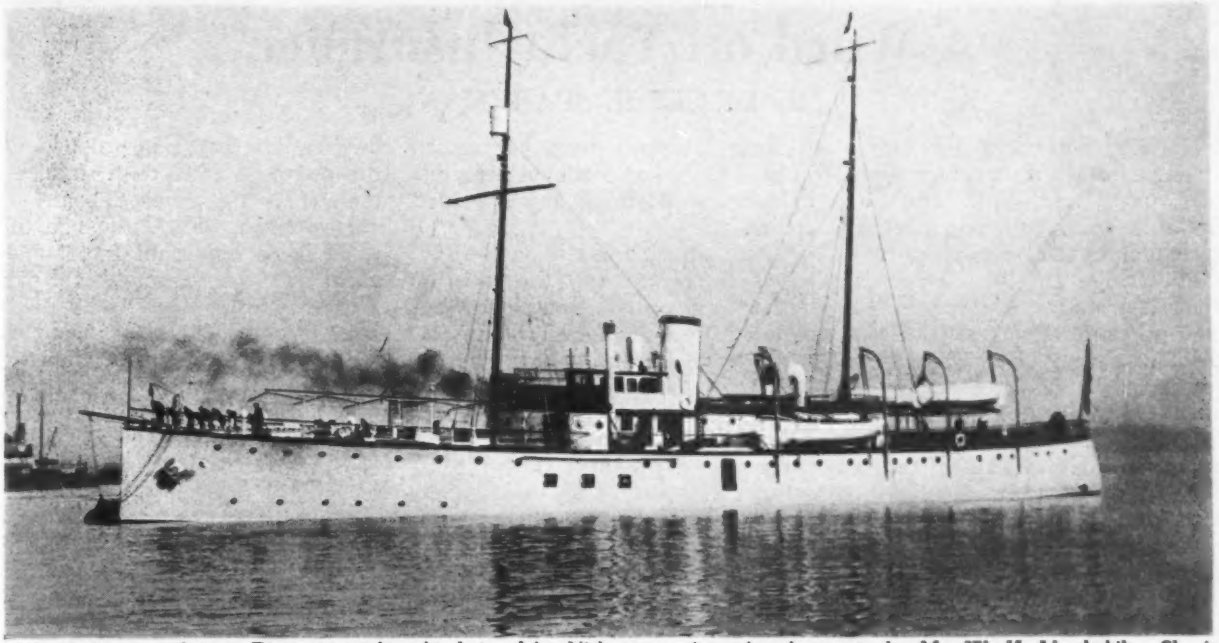
Outboard profile and sail plan of *Breeze*.

Mr. Marwin, who uses her for day sailing both alone and with a feminine passenger or two, has ballasted her with two 25-pound bags of shot placed under the floor in about the position of the sponge hole, and says she is very steady with this addition. The smaller sail plan as shown by the dotted line is the one in use for cruising.

Breeze requires little room, either to build or store, and if any of our readers care to try their hand at a building job, YACHTING will be glad to furnish any other information desired—the plans, pictures and all necessary data.



Body plan.



Ara, a new type of large Diesel-powered yacht designed by Nicholson and purchased recently by Mr. W. K. Vanderbilt. She is now in American waters.

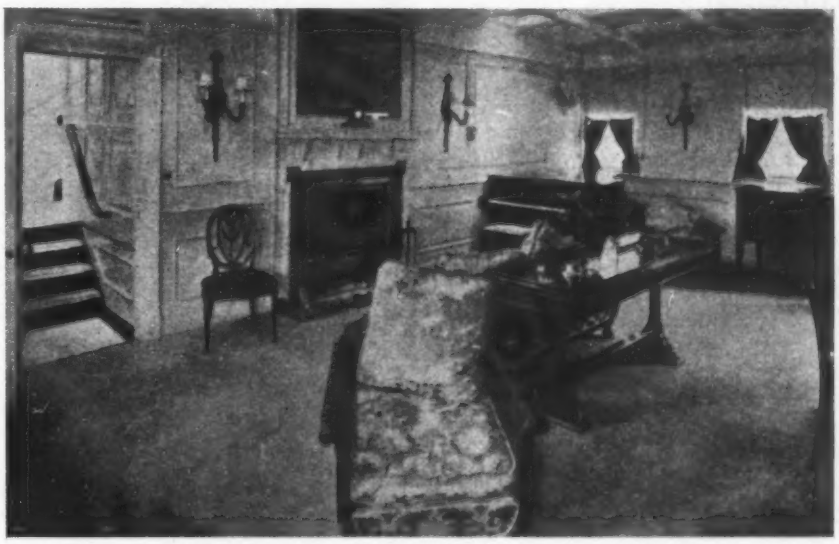
The *Ara*, Largest Diesel-Powered Yacht

THE *Ara*, the new Diesel-powered yacht in which Mr. W. K. Vanderbilt is now cruising in the Caribbean, is such a departure from conventional yacht design that the pictures we publish here are most interesting. The *Ara* is the largest full Diesel-powered yacht in the world and is also one of the most attractive. Mr. Vanderbilt purchased the yacht through Tams & King last year and since then has cruised in European waters and is well pleased with the vessel in every way.

The *Ara* was designed and built as a yacht by Camper & Nicholson. She was taken over by the French Government in June, 1918. She was the only yacht converted to a warship on which 6-inch guns were mounted and she was the first French warship to pass through the Kiel Canal after the armistice.

The hull of the vessel is of steel. She conforms to Lloyds 100 A1 classification for yachts. The deck houses are also of steel. The principal dimensions are: length over all, 213.5 feet, length between perpendiculars 198.75 feet; breadth, extreme, 31.25 feet; depth, moulded to awning deck, 22.29 feet. She is what is known as of the "awning deck type" with cruiser stern and slightly ram bow. The deck is flush giving an unbroken deck line.

(*Continued on page* 178)



The large main saloon of the *Ara* is very attractive.

Another view of the main saloon or living room.

One of the guest staterooms of *Ara*.

A Word on Yacht Insurance

By DRAKE H. SPARKMAN

THE subject of yacht insurance is one to which the average yacht owner pays very little attention and, aside from knowing whether his yacht is insured or not insured, his knowledge of this important subject is usually very vague.

The purpose of this article is to explain in a very brief way to the assured what his policy covers against and what the limitations are in his policy that he should know about. It will also explain to the yacht owner who has never had insurance the various ways in which his yacht may be insured. It will not go into the necessity of yacht insurance, as every business man is well aware of its value.

The most usual form of yacht policy, known as full marine insurance, covers the hull, machinery and equipment of the yacht against total loss or partial damage to the extent of the value of the policy, whether she be in port or at sea, in dock, on ways, on gridirons or in drydock. The perils insured against, in brief, are those of the seas, fire, grounding, stranding, sinking, collision, including dammage both to the insured yacht and other vessel, if the insured yacht be at fault, also of lightning and wind, except the policy does not cover loss or damage to spars and sails *while racing* or, on yachts insured for less than $5,000, for loss or damage to awnings. The policy also covers against assailing thieves, but some restrict this cover to theft of the entire yacht only.

It is possible by paying a small additional premium to have the policy amended to cover payments, for which the owner may be held liable, made on account of loss of life or personal injury. In short, subject to certain limitations, nearly all possible contingencies are provided for.

The usual marine policy requires that the yacht be confined to certain waters. Those on yachts used on the North Atlantic coast usually require that they be confined to the inland and coastwise waters between Eastport, Me., and Norfolk, Va. These limits may be extended and if an owner is going to take his yacht, for example, to Florida or Bermuda, by paying an additional premium the insurance company will issue an endorsement extending the policy limits. A yacht leaving the policy limits without the company's permission is without insurance until her return in safety. Owners should bear this in mind in planning any extended cruise.

The policy, unless otherwise specified, requires that the yacht be laid up and out of commission between November 1st and May 1st. If a yacht goes in commission before May 1st or stays in commission until after November 1st, her insurance does not cover unless permission is obtained from the insurance company. This navigation period may be lengthened or shortened when the policy is written and if an owner desires more than six months in commission, he is charged an additional premium or if he is going to have his yacht in commission for a shorter period, he may have his policy written at a lower rate.

To avoid claims for trivial amounts each policy has an average or loss clause which provides that no claim shall be collectible unless it equals or exceeds the amount so specified, when it is then paid in full. This average clause is usually one per cent. of the policy, but is never less than $25 or seldom more than $100.

Provision is also made to cover equipment and outfit separated from the yacht and stored ashore against the risk of fire only, to an amount which is generally 15 per cent. of the policy and when so applying ceases to cover on board.

On yachts valued at under $5,000 the policy covers a specified amount on a boat used as a tender, which applies only when the boat is actually being used as a tender but does not cover while in tow or against theft.

Policies also provide that any change of interest in the ownership will void the policy. The permission of the company should be obtained when a yacht is hired or chartered. The reason for this is obvious.

The rates charged for full marine insurance vary. Power yachts and auxiliaries pay a slightly higher rate than sailing yachts without power, largely on account of the fire hazard involved. High speed power yachts are usually charged a higher rate than the cruisers and a yacht insured for $20,000 will pay a lower rate than the one insured for $5,000. The reason for this is because the cost of repairs for any damage that may be done is greater, in proportion to the premium paid, on a small boat than it is on a large boat. On values under $5,000 the age of a yacht is an important factor and a yacht over five years old will pay a higher rate than a yacht of the same type and value under five years old. Owners often forget this when comparing rates on different yachts.

If an owner is not going to put his yacht in commission, he may reduce his insurance costs by taking out a port risk policy, which affords about the same protection as the full marine policy except that the policy warrants that the yacht be laid up and out of commission at some specified location. It is also possible to insure against fire only. Fire policies may be had covering only while laid up, or covering both while laid up and when in commission.

The charges for both port risk and fire insurance are based largely on the fire rate of the yard in which the yacht is laid up, and it is to the owner's advantage to lay his yacht up in a yard with a low fire rate in order to get port risk or fire insurance at a reasonable rate.

The individual merits of each yacht are carefully gone into by the insurance companies before accepting or declining a risk. The chief factors taken into consideration are the ownership, type, age and condition of the yacht. Where there is any question of moral hazard or the yacht does not come up to standard the companies usually decline the risk.

But Columbus Got There

A story is going around regarding an incident on the recent run of the schooner yacht *Dauntless,* formerly the *Undaunted,* from New York to Bermuda on her way to the West Indies. Among Wilmer Hanan's guests was B. K. Sharp, a well-known long Island Sound sailor. On the way down the *Undaunted* overran the islands as they did not pick them up before dark, and not wanting to take any chances with the reefs, they held off to give them a berth and then hove to for daylight. Sharp came up at 4 a.m. to take his watch and on asking where the islands were and being told that they did not know, his rejoinder was "Well, well, Columbus had nothing on us, I'll say."

A New Dauntless Pilot Boat

GRADUATES from the small one-design sailing classes have been looking forward to the development of a small able boat of more speed and style, more comfort and convenience than the small craft with limited sail area which have increased in numbers in recent years on all waters. This desire for a yacht of larger accommodations, more power and speed has been met by E. N. Way in the new Dauntless Pilot Boat, of which the first one has been completed and tried out by the Dauntless Shipyard at Essex.

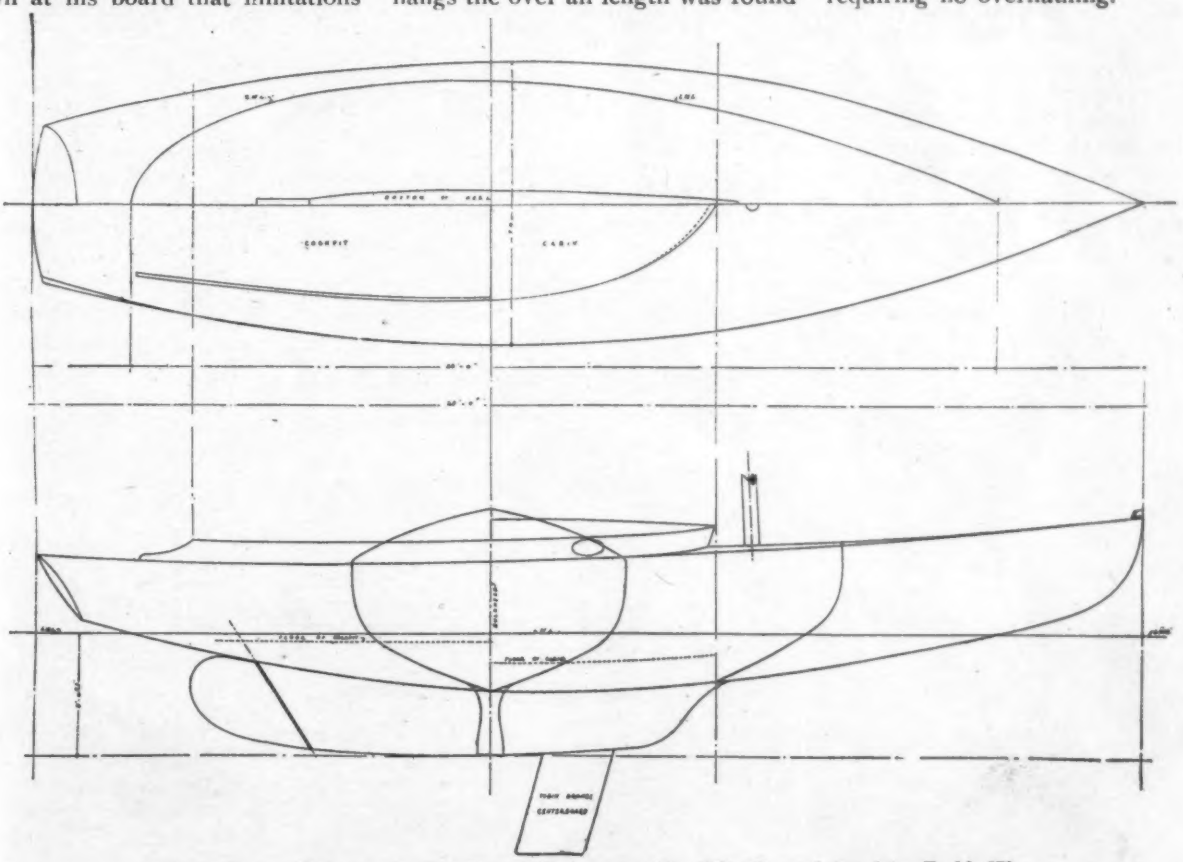
Mr. Way has not departed from his purpose of creating a big boat which could be easily handled by one person, and yet would carry four to six persons without slowing down and becoming loggy. He has added a small but comfortable cuddy where a couple of youngsters might camp for months, but dispensed with the weight and complications ordinarily imposed when cabin arrangements are included in a small boat.

Measured by performance this new boat is a big ship, but in first cost and upkeep, is comparable with boats of much less dimensions. She is seemingly a paradox of a big yacht and a little one. It commonly happens when a designer sets down at his board that limitations of one kind or another intrude, and the finished design is a series of compromises. The Dauntless Pilot Boat was designed without handicaps of any character. The designer whittled white pine blocks in the spirit of "let it happen," as shown in the plans herewith. He had no preconceived over all or waterline lengths, or breadth of beam. The waterline happened to be 22 feet and when the sandpapering had smoothed out the overhangs the over all length was found to be 28 feet. He didn't start with 22 feet and 28 feet, or yet with 7 feet 2 inches beam, in mind, but these are the dimensions arrived at, while the draft is 3 feet and with the dagger board extended, 6 feet 6 inches. The keel carries 1,700 pounds of lead and the sail area is 415 square feet.

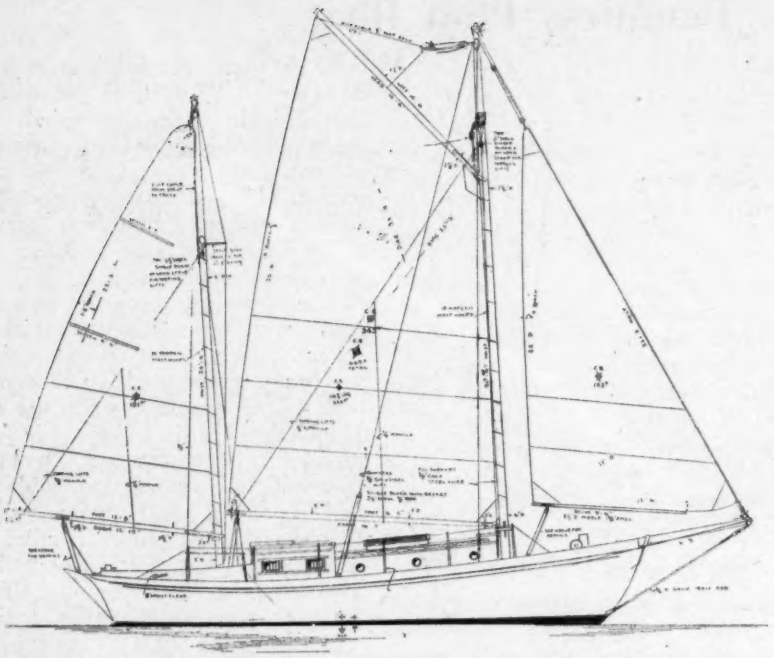
Sail plan of 28-foot Dauntless Pilot boat.

The appropriate construction and equipment were adopted without other thought. All the fastenings are brass screws and Tobin bronze bolts. The frame is of white oak 1 inch by 1½ inches on the keel tapered to 1 inch square. Stem and transom are mahogany, and the keel is long leaf yellow pine. Planking is mahogany. The deck is selected white cedar, with mahogany covering boards, the deck being covered with canvas, a tight and strong job.

The hollow spar, standing rigging and running rigging are supplied by the Pigeon Company, the blocks are specially designed and Wilson & Silsby are the sail makers, the sails being 7½ Egyptian cotton. The runner blocks are arranged to travel on a short length of track bolted to the deck and are actuated by an endless line, so that when cast off the runners are always out of the way, avoiding any cutting of the sail or chaffing of the boom and requiring no overhauling.



Plans of new 28-foot over all sailing yacht known as the Pilot Boat, designed by E. N. Way.



Sail plan of 36-foot auxiliary ketch owned by Mr. H. M. Smart of Bay City, Mich.

A 36-Foot Auxiliary Ketch

William Atkin, N.A., of Huntington, Long Island, who is designing the two 40-footers that Nutting and the Duke of Leinster are going to race across the Atlantic this summer, has sent us the plans, which we show here, of a little 36-foot over all ketch which he designed and which was built this last summer for Mr. H. M. Smart of Bay City, Mich. She is a fine little boat, suitable for extended cruising and for rough water work, with good sheer and plenty of beam, being 12 feet wide, while she draws only 3 feet of water, as it was necessary to have a shoal draft boat where she is to be sailed.

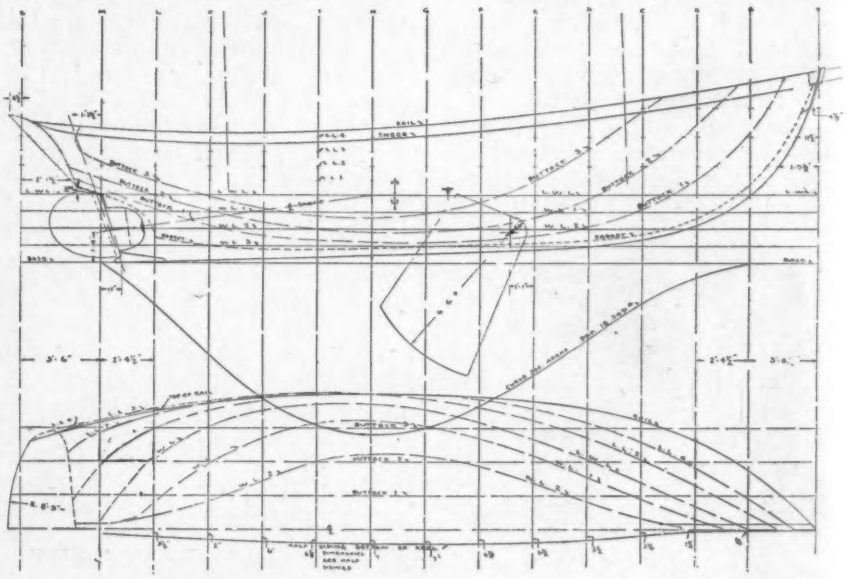
There are two deck houses with the deck beams carried across them for strength, and the accommodations are roomy and will bear careful study. For power she has a 40-H.P. Wisconsin motor which will drive her about 8½ miles per hour, under power alone.

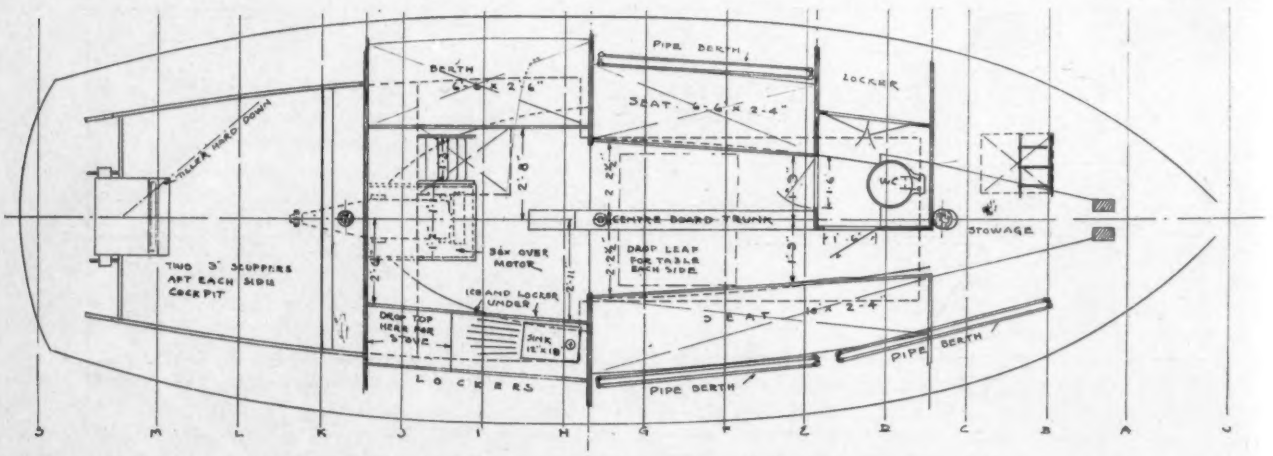
The hull design departs from common practice, and while the displacement is light (about 4,800 pounds) there has been no attempt to float the boat on any particular water line, and the lines run out easily forward and aft with considerable dead rise and a long sharp floor. With an actual waterline of 22 feet the boat is really smaller than a Massachusetts Bay 18-footer. The general plan follows the design of the Bristol Channel pilot boats, modified to meet the peculiar condition and, of course, greatly reduced in size.

The cockpit is open on account of the small size of the boat, separated from the cabin by a water tight bulkhead. The cabin house is simply a crowned roof carried across the combing, and while the head room is just under 4 feet, the sitting room on the bunks is ample and comfortable.

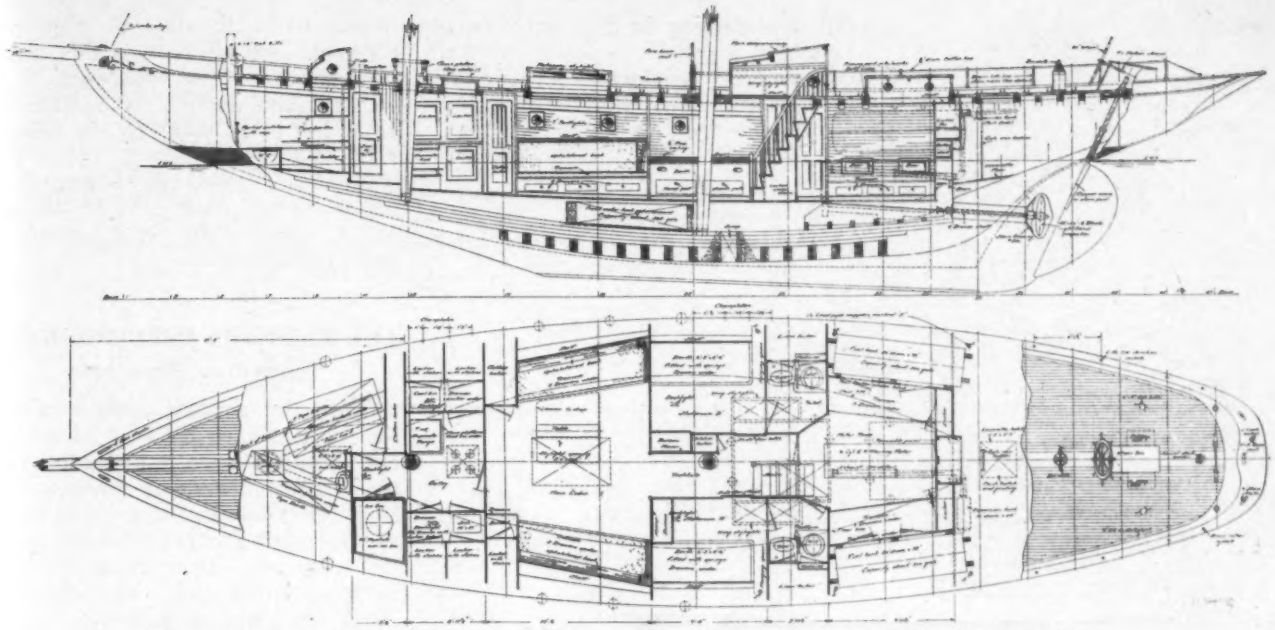
Wanderer, a 75-Foot Auxiliary Schooner

Wanderer is a new 75 foot flush deck, fisherman type, auxiliary schooner now building for Mr. Arthur A. Houghton of New York,





Accommodation plan and lines of 36-foot auxiliary ketch designed by Wm. Atkin.



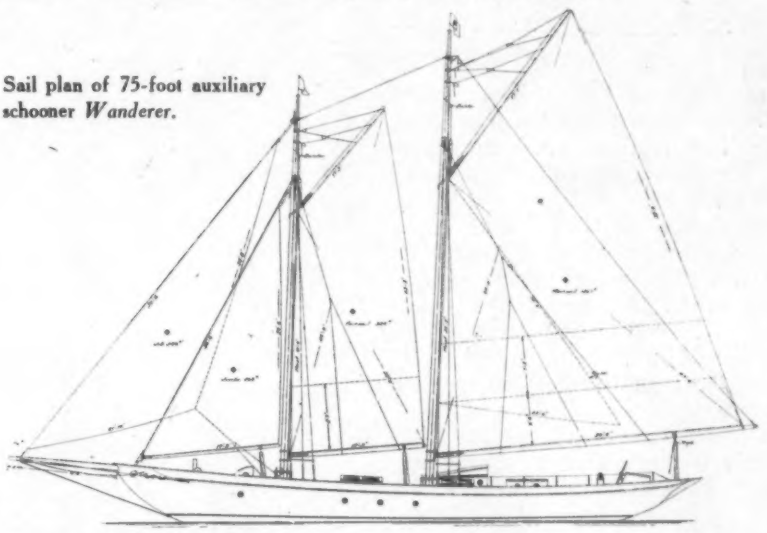
Accommodation plan and inboard profile of 75-foot auxiliary schooner designed by Wm. H. Hand, Jr.

from plans by Wm. H. Hand, Jr., of New Bedford, Mass.

This fine little vessel is nearing completion at Hodgdon Brothers yard in East Boothbay, Maine, and will be in commission early in the season. She is a husky little craft, employing ship type construction with exceptionally sturdy details and having all ballast inside.

The plans show her arrangement which includes forecastle for three men, galley, a roomy saloon, two staterooms and a *real* engine room in which there will be a 6-cylinder Sterling Trident 45-94 H.P. motor, which will drive the vessel about eight knots.

The profile is pleasing, the sheer being moderate, while the sections are easy. The dimensions are: Length overall, 75 feet 6 inches; length waterline, 55 feet 9 inches; beam extreme, 18 feet 5 inches; draft extreme, 8 feet 4 inches.

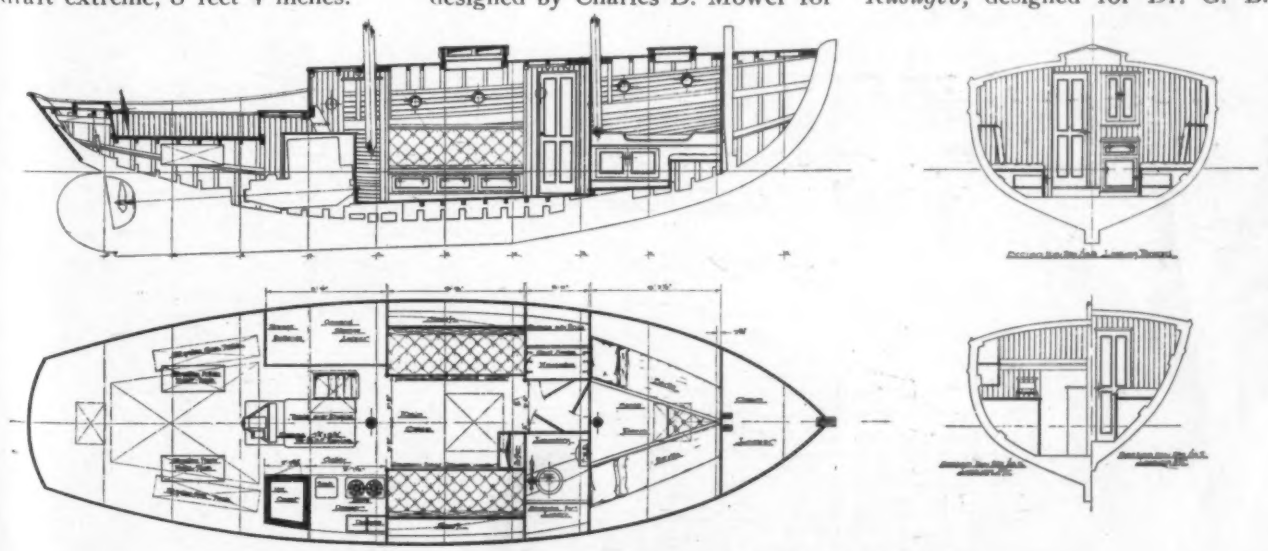


Sail plan of 75-foot auxiliary schooner *Wanderer*.

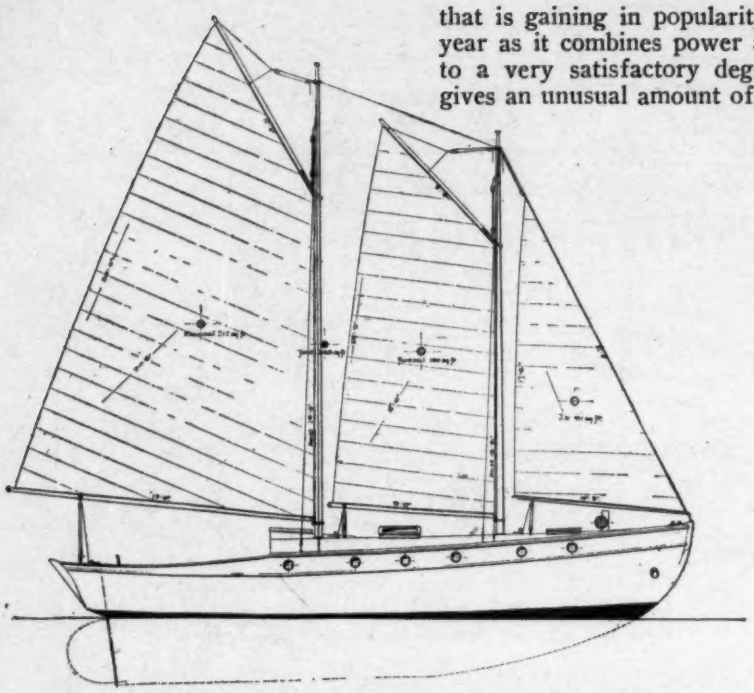
A 32-Foot W. L. Auxiliary Power Schooner

The accompanying plans show an interesting small auxiliary schooner designed by Charles D. Mower for Henry D. Bixbee of New York and now under construction at the yard of Carl N. Beetle, New Bedford.

The boat is a development of the *Rusugeo*, designed for Dr. G. B.



Plans of a power cruiser with auxiliary sail plan, designed by C. D. Mower.



Sail plan of auxiliary power schooner, designed by C. D. Mower.

that is gaining in popularity every year as it combines power and sail to a very satisfactory degree and gives an unusual amount of accommodations for the over all length of the boat. She will be a good enough seaboat to go off shore in any weather and her 4 feet draft will allow her to go south by the inside route if desired.

Her dimensions are: length o.a., 38′ 9″; length w.l., 31′ 9″; beam, 11′ 9″; draft, 4′ 0″; total sail area, 563 square feet.

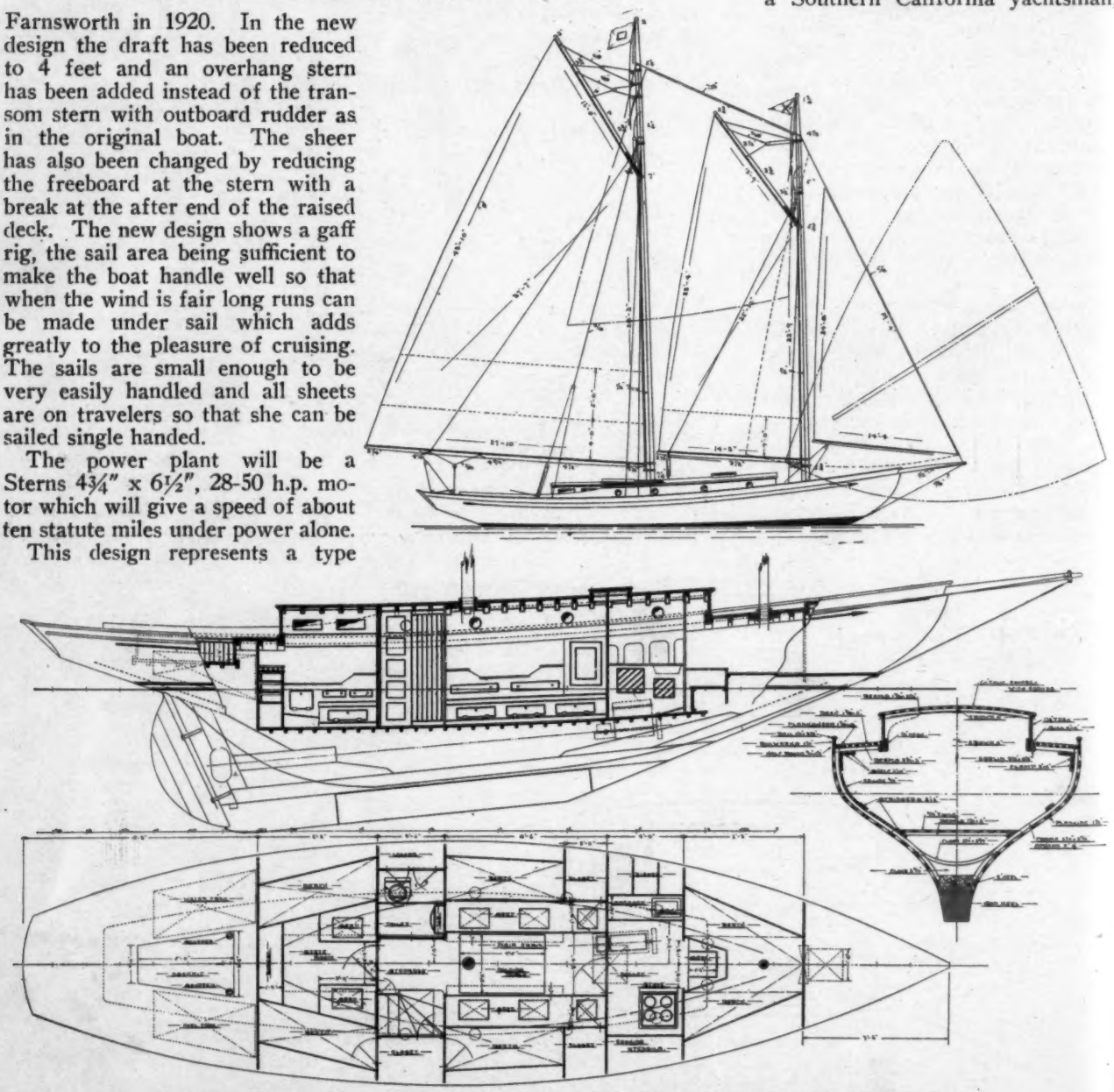
Farnsworth in 1920. In the new design the draft has been reduced to 4 feet and an overhang stern has been added instead of the transom stern with outboard rudder as in the original boat. The sheer has also been changed by reducing the freeboard at the stern with a break at the after end of the raised deck. The new design shows a gaff rig, the sail area being sufficient to make the boat handle well so that when the wind is fair long runs can be made under sail which adds greatly to the pleasure of cruising. The sails are small enough to be very easily handled and all sheets are on travelers so that she can be sailed single handed.

The power plant will be a Sterns 4¾″ x 6½″, 28-50 h.p. motor which will give a speed of about ten statute miles under power alone.

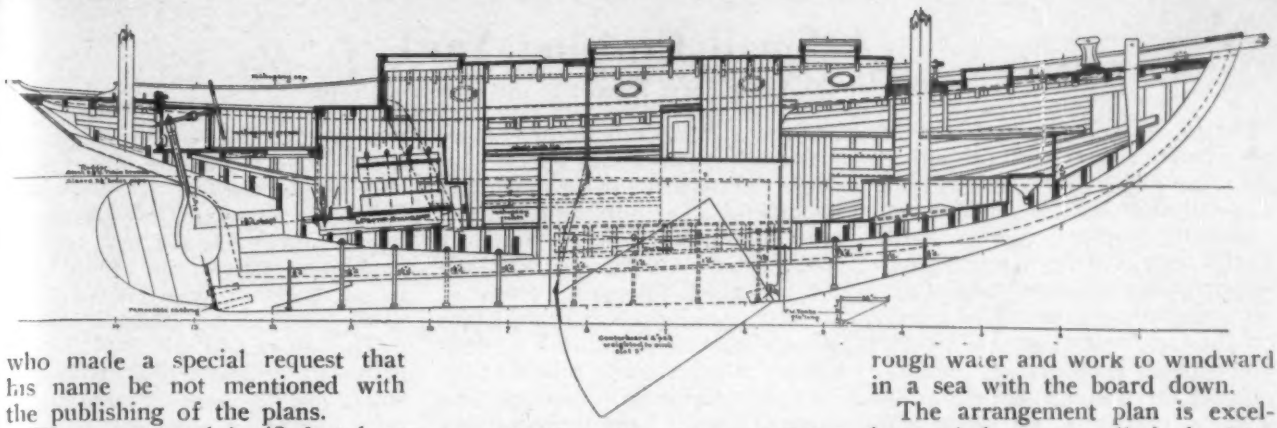
This design represents a type

The Thirty-six Foot Auxiliary Schooner *Anacapa*

With the gradual trend toward the more wholesome type of cruisers, brought about, no doubt, by the successful ocean voyages in such boats as the Dream Ship and the formation in New York City last year of the Cruising Club, it is more interesting than ever to study the plans of yachts designed especially for ocean work. The design shown herewith is one just completed by Edson B. Schock for a Southern California yachtsman,



Accommodation and sail plan of a small 36-foot auxiliary schooner designed by Edson B. Schock.



A centerboard seagoing cruising yawl 48 feet over all, designed by J. G. Alden.

who made a special request that his name be not mentioned with the publishing of the plans.

The new vessel is 48 feet long over all, 36 feet waterline, 13 feet beam and 7½ feet draft. She will carry about 1,150 square feet in her three lowers,

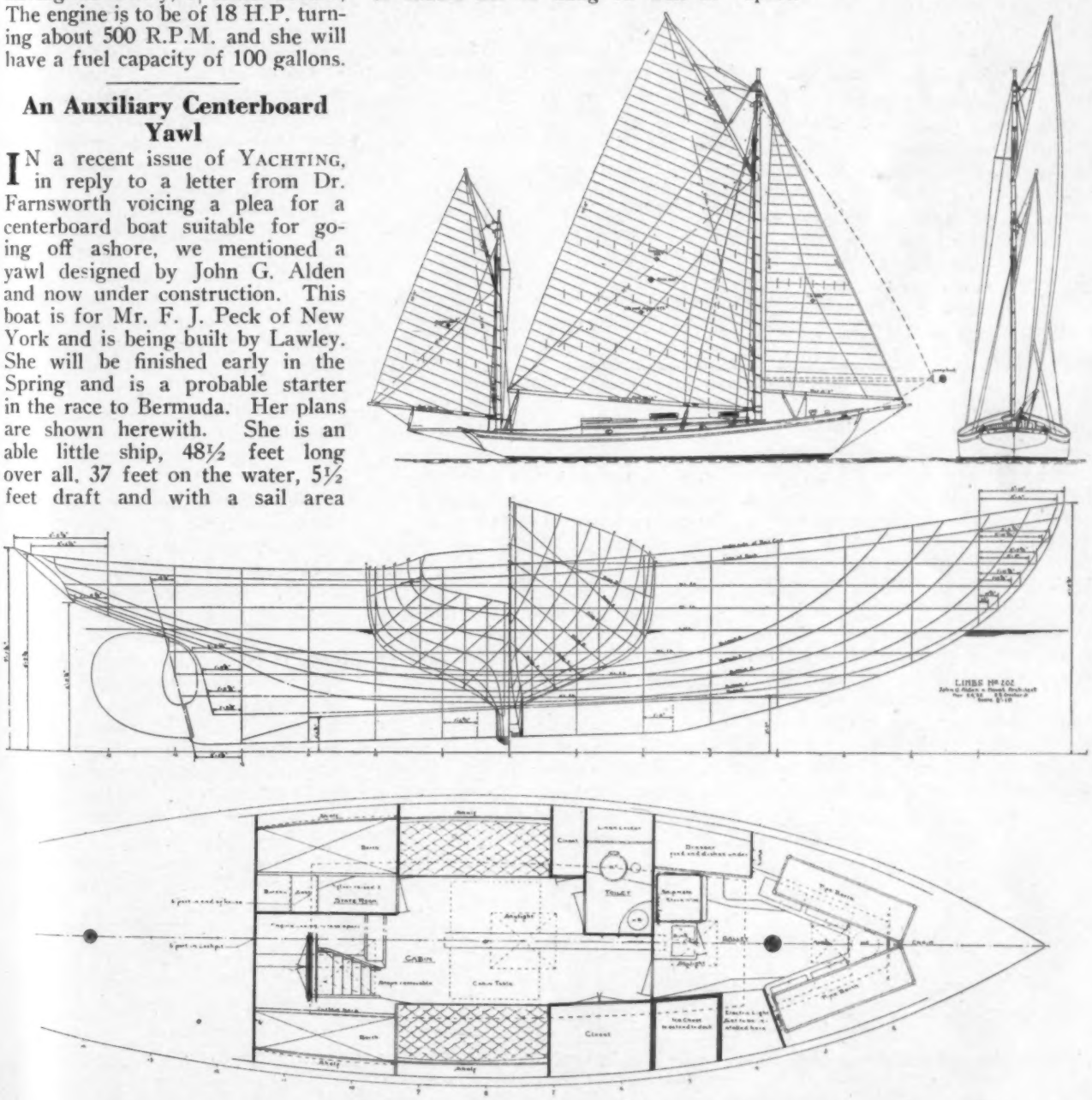
The cabin arrangement is to the owner's requirements and so arranged as to give the maximum comfort and conveniences when having his family, or ladies aboard, The engine is to be of 18 H.P. turning about 500 R.P.M. and she will have a fuel capacity of 100 gallons.

An Auxiliary Centerboard Yawl

IN a recent issue of YACHTING, in reply to a letter from Dr. Farnsworth voicing a plea for a centerboard boat suitable for going off ashore, we mentioned a yawl designed by John G. Alden and now under construction. This boat is for Mr. F. J. Peck of New York and is being built by Lawley. She will be finished early in the Spring and is a probable starter in the race to Bermuda. Her plans are shown herewith. She is an able little ship, 48½ feet long over all, 37 feet on the water, 5½ feet draft and with a sail area of 1241 feet in a yawl rig. The lines show a full-bodied boat with well balanced ends and moderate overhangs, with a fairly hard bilge that will enable her to sail on her bottom, while she has enough draft to enable her to hang on well in rough water and work to windward in a sea with the board down.

The arrangement plan is excellent and shows a small single stateroom, a built-in berth and two transom berths, with plenty of locker room.

The engine, which is a 24-27 H. P. 4-cylinder Standard is installed under a bridge deck alongside of the companion steps and is covered by an engine casing hinged to take apart.



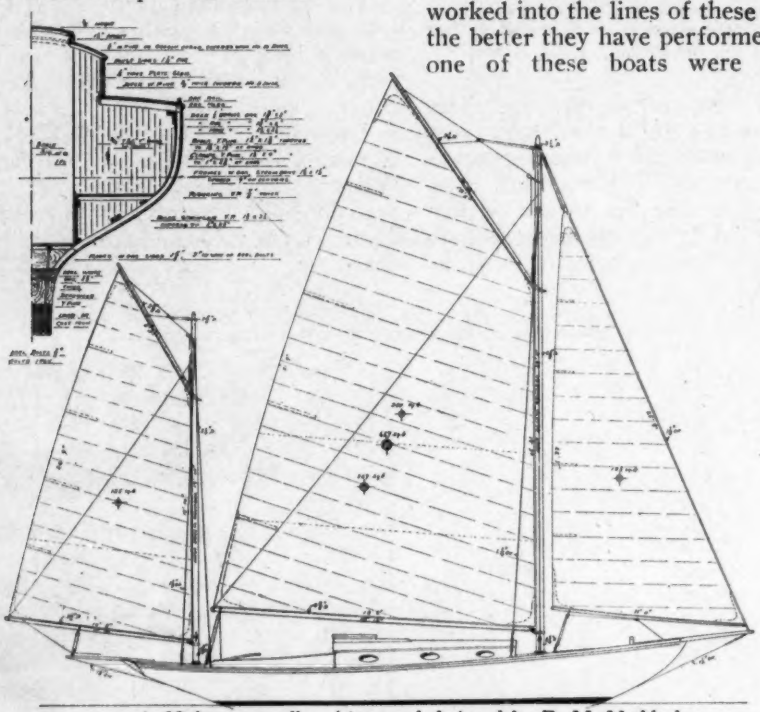
Accommodation, lines and sail plan of 48-foot centerboard yawl.

A Small Cruising Yawl

A Plea for the Yacht Form Instead of the Fisherman Type

THE smaller types of sailing craft, either with or without auxiliary power, have become very popular the last few years but owing to excessive cost comparatively few have been built, which restricts the market to boats of prewar construction which are being held at a very high figure and which are entirely inadequate in number to meet the present demand.

After considering other types and rigs, the yawl was selected because of ease of handling under any conditions. The hull with its moderate but sharp overhangs is faster and I believe a better sea boat than the so-called fisherman types so popular at the present time, which seem to resemble the bank schooners in above-water profile only. The more yacht form that has been worked into the lines of these boats, the better they have performed. If one of these boats were scaled down and analyzed a fine yacht form would result. Also, experience shows that the finer type is superior for ocean sailing as it can be driven longer and can make better weather, as witness our clipper ships of a past era, which would pile on sail and carry on long after the full bodied vessel had to heave to.



A 32-foot over all cruising yawl designed by R. M. Haddock.

So in planning the little yawl here shown to help meet this demand at a moderate price, an effort has been made to keep down the initial cost by eliminating everything that is not an absolute essential, the thought being that the boat as she comes from the builder's hands will be usable and that the buyer can make such additions from time to time as he may wish to or as he feels that he can afford. In fact many owners who are handy with tools can add much to the interior equipment at a very moderate cost, while enjoying in the meantime the use of the boat.

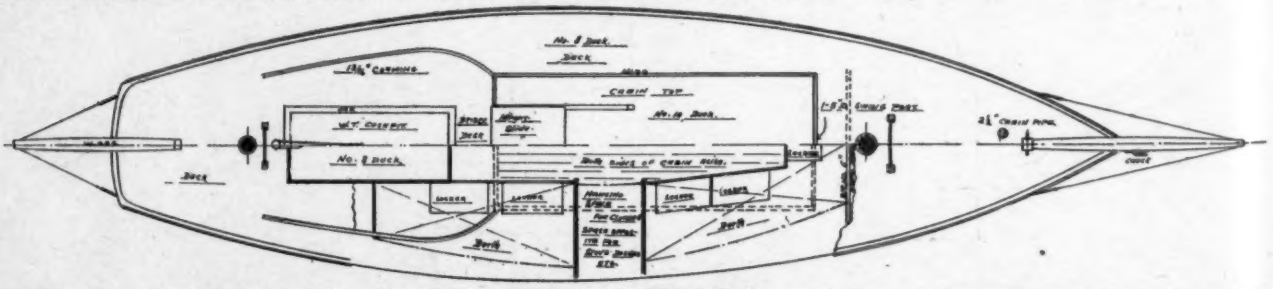
The yacht type can be built of lighter scantling which, while tending to reduce the labor cost, does not in any way produce a weak boat, as mere heft of frame and planking does not make for strength. Take a basket and a heavy wooden box beating against a sea wall; the basket will outlast the box. Therefore, a moderately light scantling with proper fastening is superior in point of lasting, as witness many of our lightly built racing boats converted to cruisers after several hard seasons' racing.

The sail plan of this yawl is moderate but sufficient to make her a smart little sailer. The mainmast is of sufficient diameter to dispense with runner back stays, which are a nuisance on a cruising boat. The draft is the least that will give a good windward boat. Some ninety per cent of the cruisers are deficient on this point of sailing due to too little draft. They are at their worst in a seaway, being set bodily to leeward by the scend of each wave. If this boat is to be used in Eastern waters 6 or 8 inches more draft would benefit her greatly. All such fittings as toilets, sinks, water tanks, built-in bureaus, ice chests, engine, fuel tank and electric lighting plant have been omitted, as being in the non-essential class and are supplied by the builder as extras only. These items frequently mount up to over half the cost of the complete boat and they can be added later.

In the interior I have only transoms forming four sleeping spaces and the two half bulkheads amidships, which give hanging space or room to install a toilet and a shelf for a stove or dish rack. The rest of the equipment is one anchor, one manila cable, one set of sailing lights, one anchor light, and one hand bilge pump.

The general dimensions are: Length o.a., 31′ 10″; w.l., 22′ 0″; beam extreme, 8′ 8″; draft extreme, 4′ 11″; sail area, 627 sq. ft. Being under 32 feet length the usage tax does not apply.

[Some of our readers may think there is ground for argument over some of the points made by the author in taking up the cudgels for the yacht type in cruising boats. We'll probably hear from the other side in time for the next issue.—ED.]



Accommodation and deck plan of 32-foot over all yawl designed by R. M. Haddock on yacht lines, which he contends are better for cruising than the fuller bodied fisherman type.

How To Take Lines Off A Model

By C. D. MOWER

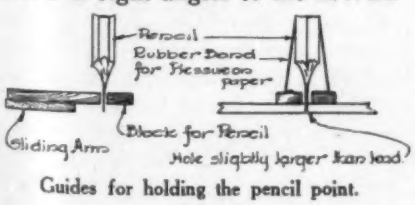
I was once called upon to take the lines off of a collection of half models in one of the yacht clubs and the number of models to be taken off made it necessary to devise some means of doing the work quickly as well as accurately.

Interviews with professional model makers brought forth no better suggestion than bending strips of lead over the model to get the shape of cross sections and this was discarded as too slow and inaccurate.

After some thought I devised a scheme which worked well in practice and it was simple and easily made. I first took a small drawing board about 16" x 20" and cut an opening large enough to allow standing it on edge over the half model. Next I took a small T square and cut it to the length shown in the sketch. On one edge of the T square a sliding piece was arranged so that it would work vertically in close fitting guides, with a pencil point fitted as shown in sketch.

The drawing board was fitted with brackets on the back so that it would stand vertical to the face of the board on which the model was placed. The operation is as follows: First, the model is placed on a sheet of paper tacked to a large drawing board and the profile drawn from the model and the load water line located. The model is then removed and the waterline drawn in with a straight edge; also a base line parallel to the load waterline and about 7" or 8" below it. Next the waterline length is divided into 10 equal parts, accurately spaced with dividers and the ordinates drawn which are to be the locations of the cross sections of the body plan. Additional ordinates are drawn beyond the L.W.L. endings as required by the form of model being taken off. The ordinates must be accurately drawn, perpendicular to the base line.

We are now ready for the cross sections, and first the small drawing board is placed so that the face of the board is exactly on station No. 5 at right angles to the L.W.L.



Guides for holding the pencil point.

and exactly perpendicular to the board on which it stands. A few lead weights should be used to hold it firmly in position. Next a sheet of paper is tacked to the small board above the opening for the model. The model is placed on the board and located exactly on the profile already drawn.

Now by sliding the T square along the upper edge of the small board (which must be parallel to the surface of the large board) and allowing the lower end of the sliding arm to follow the shape of the model, the pencil point on the sliding arm will trace on the sheet the exact shape of the cross section of the model. The location of L.W. L., center line, and endings at plank sheer and keel bottom should be marked on the diagram.

Before the board is moved the location of base line should be spotted on the small board so that it can be set to the same base line location in the other ordinates.

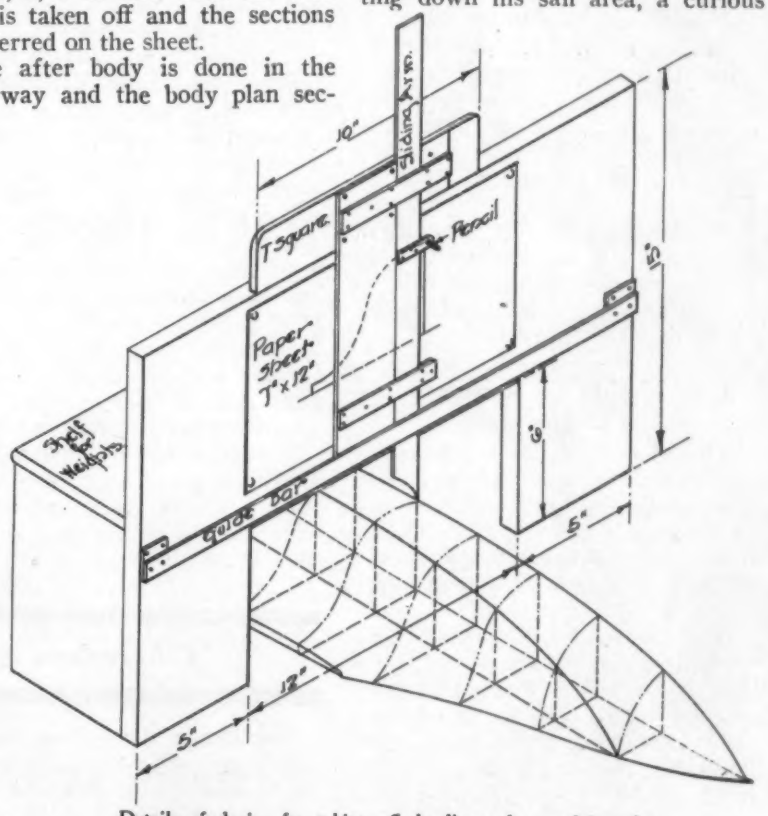
A little practice may be required to operate the T square and the sliding vertical arm so that the lower point follows the shape of the model exactly, but it can be done without trouble. The small board is now moved forward to No. 4, 3, 2, 1, 0 in turn until the fore body is taken off and the sections transferred on the sheet.

The after body is done in the same way and the body plan sections are complete. From the body the half breadths can be taken and a half breadth plan showing the waterlines and the deck line can be drawn and faired up as necessary. The buttock lines can be drawn on the profile to complete that plan.

The ten stations are used by designers for convenience in making calculations of displacement, center of bouyancy and center of lateral resistance, but a builder would probably take off the cross sections at the locations desired for moulds in a small boat or spacing of frames in a larger one. This method allows taking the lines from a finished model without injury to its surface, and the degree of accuracy depends only on the care with which the device is made and operated.

Are Model Yachts Over-canvassed?

On January 13th, the Central Park Model Yacht Club gave its annual dinner and distributed the prizes won the past season. Among the recipients was Mr. George Magelhaes, who unexpectedly turned part of the dinner into a technical meeting by telling how he did it. The sum of Mr. Magelhaes's statement was that he won races by cutting down his sail area, a curious



Details of device for taking off the lines of a model yacht.

remark at first, though, but readily understandable on analysis, on much the same theory that it is possible to over-power a motor boat.

In large boats the area of the sail is practically limited by the amount of heel which is safe or comfortable, but in the model this requirement does not obtain, and more and more sail has been crowded on until the boats are generally in the condition expressed as "lugging it." One sees often in the fishermen, and occasionally in Corinthian races, boats pressed with canvas, the water over half the deck, in a mistaken effort to get speed, when it is morally certain that the boat would travel easier and faster with less sail, coming more to her proper sailing lines.

In watching the models it is not unusual in a puffy wind to see them lie down almost on their beam ends, head up into it, stand up again and finally fall off and start on their course. With less sail the model will not heel so quickly and have time to start moving, balance her centers and keep more closely to her course. The sailor is better able to know where his boat is going and to be there himself. In other words, she is more manageable, is just as fast and travels in the right direction a greater proportion of the time.

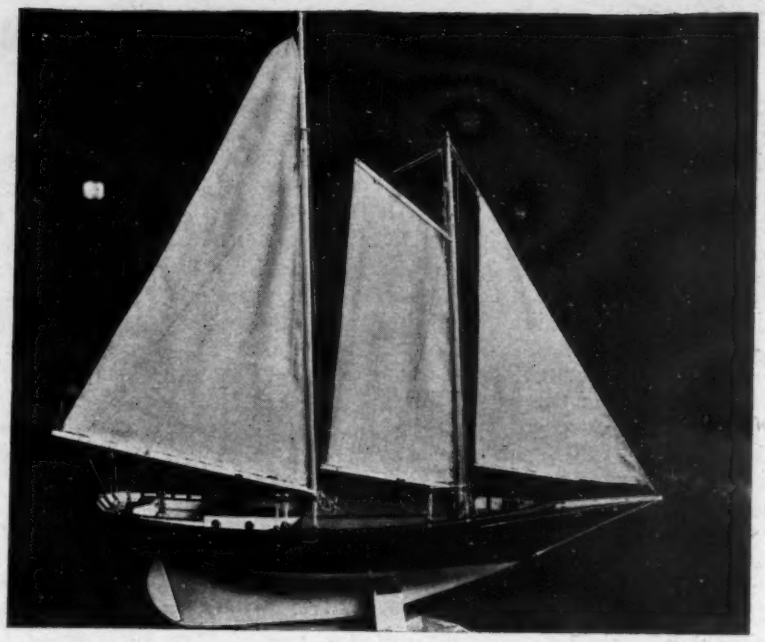
There is another factor in this idea, due to the present classifications f the M.Y.R.A. Many class "B" boats have been built with hulls a little small and sail crowded on to put them up in the class, but still leaving them about the middle. It is possible in most of these boats to bring them into the top of the next lower class by a reduction in sail area, and while losing practically nothing in speed, they have a much better chance of winning.

There is considerable food for thought here, either in designing a new boat or in overhauling the old one and model yachtsmen will do well to go further into such an investig tion for themselves.

The M.Y.R.A. Acquires a New Member

The Model Yacht Racing Association uses the word "America" in its broader geographical meaning and makes it possible for clubs in Canada and Mexico to participate in the advantages of the organization.

The Montreal Model Yacht Club is the first club outside of the States to come in, being elected a member recently. This club has an enthusiastic membership and is planning an interesting season, aside from the international race mentioned elsewhere.



Model of 40-foot over all schooner in which W. W. Nutting expects to cross the Atlantic this summer in a race against the Duke of Leinster.

At its last meeting the M.Y.R.A. appointed a committee to prepare a report on a standardized set of sailing rules. This report will soon be ready and when adopted will be given in full in these columns.

The Trans-Atlantic Race

The Plans for the race across the Atlantic this Summer between W. W. Nutting and the Duke of Leinster have been practically completed and the two boats for this event are building at the Port Jefferson Marine Railway, Port Jefferson, Long Island. A model of these boats was seen at the New York Motor Boat Show. They were designed by William Atkin and are 40 feet in length over all. The two hulls are identical, one being rigged as a schooner with a jib-headed mainsail and the other as a ketch. Boats will be auxiliaries, the Duke planning to use a Scripps engine and Nutting a Sterling motor. Each boat will carry a stipulated amount of fuel, to be used when and where judgment dictates. The boats plan to get away early in July. At that season of the year, when the winds are mostlly S. W. and W., a good passage is likely.

A. L. Judson

Yachtsmen throughout the United States will hear with a feeling of personal loss of the sudden death on February 16 of A. L. Judson, president of the American Power Association. Mr. Judson had apparently been in good health but died on the train while on a trip to Albany, New York.

For many years Mr. Judson has been head of the American Power Boat Association and has probably done more than any other man in this country to build up that organization and to make it the factor that it has been in power boat racing. He has always worked hard for the sport and stood for the very best in racing ethics. It is through his efforts that many of the successful Gold Cup races have been run and he has given his time freely in the development of the high speed racing power boat.

In appreciation of what he has done the American Power Boat Association, at a recent meeting, voted to put up a cup to be known as the Judson Memorial Trophy which is to be subscribed to by all those yachtsmen who knew Mr. Judson and believed in what he stood for.

Red Bank Builds Both Kinds

It is reported that the Red Bank Boat Works of Red Bank, New Jersey, have in their yard three speedy craft which, it is rumored, are to join the ever growing fleet of fast bootleggers when they are finished. By a strange coincidence in the same shop and right alongside of them the Red Bank people are building six boats for the revenue service to catch the first three they are turning out We wonder who will win the race.

Have Your Own Motion Pictures

Do you want to see your boat as others see her?

Do you want to make lasting the memory of that close race? Would you like to see again the things you saw in that long, lazy summer cruise?

We will do it for you with the motion picture camera. And negative and print will be yours and will last for generations.

We also make pictures that are permanent records of the

Life of the Home

As real as life itself. Made at your own home without inconvenience to you. Expert directors and cameramen insure beautiful and interesting pictures.

Our Plan Includes Also a Compact Portable Projector

Anyone can operate it. The pictures can be shown in your own home in any room—large or small. All you need is an electric light connection.

If You Want Industrials

We make those too—along with films of dogs and horses, boats, games, clubs—all group and individual activities or hobbies in normal speed or slow motion photography. Prints can be furnished in black and white, tints, or natural colors.

Under the Direction of Arthur Guy Empey

Write for terms and particulars, mentioning Yachting.

The National Motion Picture Institution of America, Inc.

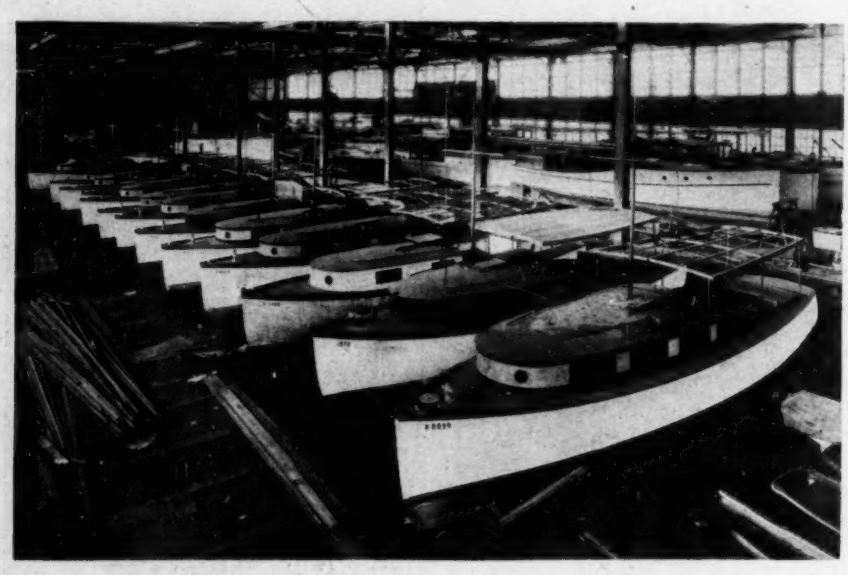
220 WEST 42nd STREET NEW YORK

OF INTEREST TO THE SKIPPER

Service for Cruisette Owners

Here is a photograph which will be particularly interesting to the growing number of owners of standardized boats. This line-up represents some of the Elco Cruisettes stored in one of the big steel and concrete buildings at The Elco Works at Bayonne, New Jersey.

Last Autumn, as the boating season neared its close and brought with it a realization that service was an important part of any modern business, The Elco Works laid before owners of Cruisettes within a reasonable distance of Bayonne, a proposal to take care of their boats during the Winter. Each owner was informed he might bring his



Cruisettes laid up for the winter in the shed at the Elco plant. It is part of the Elco service plan to house and take care of the boat during the winter season.

Cruisette to the yard, tie her up at the float, go ashore and take the first train home. The Elco organization would do the rest. They would take out all the dunnage from the lockers, clean the boat thoroughly inside, look over the power plant to see that it was in good shape, remove the storage battery and take proper care of it until Spring, haul out the boat and store her under cover.

They went even further than this and cleaned off the bottom of the boat. The owner was given a definite price—a remarkably low one for all of this service. He can have his boat put overboard in the Spring, all of the equipment placed aboard again, and take her away and settle with the company for $70. The picture shows a part of the fleet whose owners took advantage of this service plan.

Roller Reefing Gears

Louis J. Larsen, Sailmaker, 45 Fulton Street, New York, writes:

"I was very much interested in reading your article about roller reefing gears in the November issue of YACHTING, as I was acquainted with roller reefing gears and sails since I was an apprentice boy, and I remember in Copenhagen nearly all the yachts used this type of sails.

"I remember racing on the Sound four days in succession, as one of the crew in a sloop that I believe was over forty feet, and I also remember that reefing caused very little delay or work. I think if yachtsmen in this country had a chance to get acquainted with this rig that they would all use it. I would be very glad to take care of any inquiries you might receive as I would be able to furnish gears and sails in a reasonable time."

Louis J. Larsen is making a suit of sails for the schooner yacht *Lismore II*, owned by Redmond Keresey, Jr., of specially made duck.

New Jersey Flyers and Motors

An exhibit at the Show that made an appeal to the "bugs" was that of the New Jersey Motors, Inc., of Keyport, New Jersey, who show their little Jersey Flyers, an 18-foot high speed runabout V-bottom design.

These are fine little boats with a good-sized cockpit with two 'thwartships seats seating six, and if you are looking for speed thrills, and yet have not the speed-pocketbook, these boats will be just what you are looking for. They will make in excess of 23 miles an hour.

The engine end of the exhibit showed the well-known N. J. M. engines, manufactured by this company, of which ten models were exhibited. This motor is completely equipped and is making history in economy of operation and reliability. The company says that all their parts are interchangeable with Ford engine parts which, as any one can see, is a great factor in economy.

Edward Smith & Co. Spar Varnish

There were two features of particular interest in the display of Edward Smith & Co., the founders of the Varnish Industry in America in 1827, at their booths Nos. 23 and 24, at the Motor Boat Show.

One of these, an oil painting by Jean Paleologue, twenty feet long by about six feet high, adorned the entire rear wall of their booths. It showed the first varnish factory in America, with Pascal B. Smith, the founder of Edward Smith & Co., making varnish in the small kettles then in use. The factory was situated in an old apple orchard on the Stuyvesant Farm at what is now about Sixth Street, near the East River, New York City.

The other feature of their display was a novel and remarkable test of the durability of "The Cup Defender Varnishes." It should be witnessed by all boat enthusiasts who are interested in the varnishes that have been used on America's Cup Defenders in the International Races for the America's Cup.

E. J. Willis Co. Marine Equipment

The Show exhibit of a company that specializes in equipment for boatmen is sure to be interesting, and the E. J. Willis Co., of New York, had one that sure made every boat owner sit up and take notice. This company has secured from the Government, the U. S. Navy and the Shipping Board much of their surplus equipment, which it is able to sell boat owners at very attractive prices.

The Willis Co. have over 4,000 kapoc life preserver jackets, over 1,500 binnacles and compasses, 900 coils of manila rope, fenders, ring buoys, and the like. Samples of these were seen at the Willis booth, where they went like cards before a nor'west wind.

TARPON INN, USEPPA ISLAND, FLORIDA

A Picturesque Island—Deep Sea Fishing
A Variety of Recreation and Honest Hospitality

WHEN the steamer slips out of South Boca Grande and points her nose into the coral seas, you're on your way to add vigor to your body, to feast your eyes and to know true contentment in a land of play. In a word, Tarpon Inn, Useppa Island, Florida.

You never forget your first view of "Useppa the Beautiful." It makes you think of a picture painted by a master's hand. To Nature Worshippers, it is a bit of creation in her most loving mood.

What a setting for sport, recreation—and health!

Sport! Did you ever angle for the "King of Deep Sea Fish"—the gamest fish that ever swam; the fighting, silver mailed tarpon? Truly, if you're a keen fisher-fellow there's a never-to-be-forgotten experience waiting for you when you put your troll into the sky-blue waters of Charlotte Harbor—the most famous tarpon waters on the continent.

And when you come to Tarpon Inn bring your bathing suit, camera, tennis racket and golf sticks.

Golf!—here is located the "Sportiest Nine Hole Golf Course in Florida." Indeed, it is a revelation to both amateur and professional alike. Combined with the rolling, broken surface, the beautiful fairways, the unique, natural hazards and the great friendly shady palm trees which dot the velvety green reaches, it is man's handiwork and Nature in grand unison to insure variety and interest every foot of the way. Besides there's always an expert coach in attendance.

Then after hours crowded with sport and recreation, there is nothing that can quite surpass the incomparable cuisine at Tarpon Inn. Here your ravishing appetite relishes the varied and generous dishes which are prepared to the zenith of tastiness.

In all, Tarpon Inn, Useppa Island, Florida, is a charming summer playground in winter time. Here is offered to you the unblemished realization of an ideal vacation—an enchanting atmosphere, a carnival of sport and recreation, an hotel that is like a great country estate and a circle of congenial, fun loving people who have really discovered how to live. Finally, for a consideration that leaves even a normal pocket-book unconcerned.

The Land of PLAY!

Off-Shore View of Tarpon Inn

Spectacular Leap of a Silver King Tarpon

Almost Record Tarpons

"Sportiest Nine Hole Golf Course in Florida"

Drawn from Photograph

Tarpon Inn

Send request form for Booklet and Detailed Information

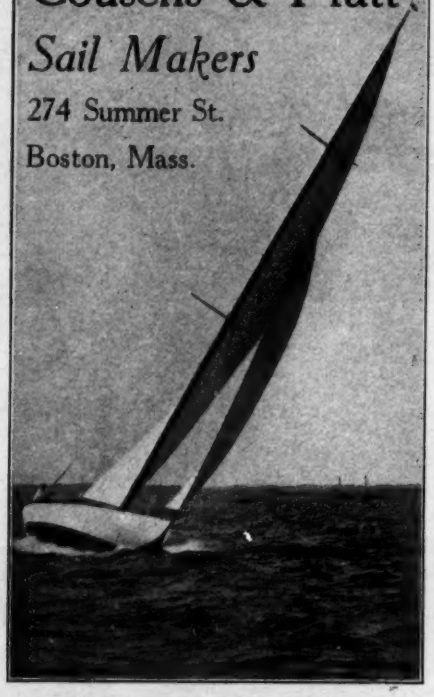
TARPON INN
Useppa Island
Lee County
Florida
Dept. B

Please send me your booklet and further particulars.

Name .....

Address .....

Cousens & Pratt
Sail Makers
274 Summer St.
Boston, Mass.



Ever-Warm Safety-Suit
Will Add Joy and Comfort to Your Cruise
Positive protection against drowning or exposure. *Brings absolute peace of mind.* U. S. Navy uses—S. S. Companies recommend it—the only life-saving device that has made good under ANY and ALL conditions. Write for Booklet Special Ocean Voyagers Rental Plan—Ask for Details

On in a flash over all your clothes

National Life Preserver Co.
Dept. 30, 11 Broadway, N.Y.C.
Pacific Coast Agents
315 Mutual Life Building
Seattle, Wash.

STEARNS-McKAY
MARBLEHEAD
ANTI-FOULING
BOTTOM PAINT

For Racing and Cruising Yachts
Increases Speed, saves fuel and large Expense bills. A hard and peculiar slippery finish which lasts a long time. It Pays for itself many times over each season by eliminating costly repair, scraping and repainting work. A powerful wood preservative and anti-fouler, it is equalled only by copper sheathing as a protection against Teredos.
For Topsides
Full and Semi-Enamel Yacht White
STEARNS-McKAY MFG. CO.
Marblehead, Mass., U. S. A.
Advice and consultation free on all painting and repair work.

News from the Yacht Clubs

New York Canoe Club Active

The N. Y. Canoe Club made an effort the past season to revive the sport of decked canoe sailing, and the results were very gratifying. Orders for five or six new canoes of the latest model have been placed for Spring delivery, and the prospect of an eventful season in 1923 is most encouraging.

Sailing a canoe calls for great skill, speed and nerve, and gives the utmost in spectacular racing. The N. Y. C. C. will endeavor to have the boats get into the Sound regattas, the main difficulty being the distance from the club to the starting lines in the Sound. Arrangements will probably be made for towing to and from the racing courses.

The officers for the ensuing year are: Commodore Geo. A. Ball; Captain, W. F. Goodwin; Treasurer, G. L. Byrne; Secretary, F. L. Hibberd; Asst. Treas. A. A. Buchanan.

Columbia Yacht Club (Chicago) Elects Officers

At the annual meeting of the Columbia Yacht Club, held in November, the following officers were elected for the year 1923:

Commodore, Wm. Geo. D. Orr, schooner *Fame;* Vice Commodore, Samuel Dauchy, sloop *Sari;* Rear Commodore, E. C. Boutelle, cruiser *Jean Marie II;* Treasurer, Fred C. Taylor, launch *F. C. T.;* Secretary, Fred D. Porter, "Pup" *Iro.* Directors, two years, H. D. Moreland, Walter S. Gerts.

A. G. Hill Heads Knickerbocker Y. C.

The Knickerbocker Yacht Club of Port Washington, L. I., one of the oldest yachting organizations in the United States, held its annual meeting at the Hotel Pennsylvania in January. Commodore P. C. Gallagher, who has led the club for several years, did not stand for re-election and Arthur G. Hill, owner of the sloop *Red Wing,* was elected Commodore; Dr. H. T. Deane, Vice Commodore; Julius Fleischman, Rear Commodore; A. D. Dyke, Treasurer; and W. H. Crawford, Secretary. The Board of Governors consists of Howard L. Curry, P. C. Gallagher, William H. Ward, William H. Knemeyer, Louis H. Zocher, F. W. Read.

J. O. Sinkinson, who had served the club for 28 years continuously as Secretary, and who declined to stand for re-election, was presented with a gold watch in recognition of his long service to the organization, and the retiring commodore was given a handsome watch fob. At the dinner which followed the meeting were seated six life members who had been members of the club for 30 years.

Stuyvesant Y. C. Enlarges Club House

During the Spring the Stuyvesant Yacht Club will start building an extension to its present club house in Pelham Bay Park, New York City, which will be more than half as large again as the club's present quarters. The members confidently expect the year 1923 to be a most active and eventful one, both in the club and in yachting generally. The following officers have been chosen to lead the organization this year: Commodore, George Tracy; vice-commodore, J. W. Armstrong; rear-commodore, Wm. Bell; treasurer, C. S. Ogden; recording secretary, Wm. Briesemeister; financial secretary, W. P. Purdy; measurer, C. H. Clapper.

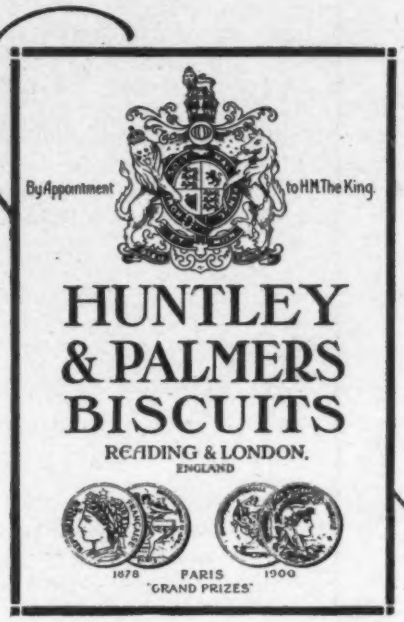
Yachting Department, N. Y. A. C. Elects Officers

At the annual meeting of the Yachting Department of the New York Athletic Club, held on January 4th, the following officers were elected for 1923: Commodore, Thomas Farmer, Jr.; Vice Commodore, L. F. La Roche; Rear Commodore, E. Jimenis; Treasurer, E. J. Benson; Secretary, E. H. Tucker.

The annual report of the Executive Committee showed the department to be in a flourishing condition, and all set for a big season in '23.

Rule Book for the Northwestern Ice Yachting Association

We have just received a copy of the first printed by-laws and sailing rules for ice boat sailing that we have seen, in the year book of the Northwestern Ice Yachting Association, that live organization that promotes ice boat racing in the Northwest. It is extremely interesting and in addition to the by-laws, gives the racing rules, articles on the management of races, right of way and the like. Such a publication is necessary wherever ice boat racing is to be carried out systematically.



The Sweetmeats of Kings

By Appointment to
HIS MAJESTY KING GEORGE V
H. M. The King of Italy
H. M. The King of The Belgians H. M The King of Sweden
The Imperial House of Japan
H. M. The King of Siam H. M. The Queen of Norway
H. M. The Queen Mother of Holland

ALTHOUGH there is every reason to call Huntley and Palmers Biscuits "The Sweetmeats of Kings" they are also enjoyed and commended by particular people all over the world

Obviously, the rare goodness of these finest bits of bakery must have been constant to create this far reaching influence. Nothing else but ever supreme quality and the zenith of appetizingness in making fine biscuits could have induced an ever increasing demand for them in the United States, the United Kingdom of Great Britain, the continent of Europe and, in fact, all the principal markets of the world.

In this way it has been possible, literally speaking, to bring to your door these products of long experience in the art of making the world's finest biscuits. So you can now, with countless others, enjoy the aristocrats of fine biscuits—as it were, "The Sweetmeats of Kings."

"A Biscuit for Everybody's Taste"

If high-grade grocers cannot supply you write

RIDGWAYS TEA CO.,
60 Warren St., New York

HUNTLEY & PALMERS

Famous Biscuits

SOLE AGENTS U. S. A.

Ridgways Tea Co.

NEW YORK CHICAGO